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Issue 302

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Philipp Stummer's
'Hemisphere' wall
cabinet build

FONT OF ALL KNOWLEDGE

BBC Young Carpenter of the Year Tibby Singh tackles a truly unique commission



JOHN BULLAR

Choosing the best wood for your furniture making projects

PLUS...

- Michael Huntley shows us a puzzling Japanese joint
- Around the House: bathroom storage solutions
- Les Thorne's tale of two candlesticks

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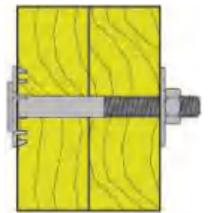
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Welcome

Even though we are still very much in the thick of winter, that doesn't mean it has to be a period of wasted workshop time. I hope you find this month's issue to not only be informative, but also inspirational, and who knows, it may even broaden your horizons?

We kick off with Tibby Singh's front cover project, **p30**, which sees him tackling a truly unique commission for his local church; followed by the next article in John Bullar's start furniture making series, **p40**, which looks at the subject of choosing wood – a broad subject which he handily breaks down into bite-sized pieces; and if you've been following Michael Huntley's Japanese joinery series, then things are about to get interesting, and tricky, as he shows and explains the process for making a Japanese puzzle joint, **p48**. Phil Davy's innovative bathroom storage solution is a great winter project, **p71**, and if you fancy trying out some ageing techniques with your turning, then take a look at Les Thorne's candlesticks, **p80**.

Of course, I had to squeeze in a few younger makers, namely Warwickshire College student Philipp Stummer and his stunning wall cabinet, **p52**, which shows excellent promise – we definitely think he's one to watch – and David Gates' unique collecting cabinets (pictured above) form this month's centrefold, **p46**.

If you've ever wondered what Iron Age woodworking entailed, from the tools and techniques used to the vessels produced, then Mark Griffiths' article documenting the construction of the Pallasboy Iron Age Vessel will no doubt tick all the boxes, **p58**, and if green chairmaking is more your bag, Barrie Scott's report from Abbots Living Wood will no doubt inspire you to pick up your froe, **p66**.

Andy King tests all manner of kit this month from a variety of clever workshop marking solutions, **p14**, to a nifty glue container, **p16**, which he awarded the full five stars. And if you'd like to win a set of two of the Pica-Markers products tested, then see **p79** to find out how.

Tegan Foley, Editor



Tegan Foley
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Andy King
Technical Editor



Dave Roberts
Consultant Editor



Phil Davy
Consultant Editor

We endeavour to ensure all techniques shown in Good Woodworking are safe, but take no responsibility for readers' actions. Take care when woodworking and always use guards, goggles, masks, hold-down devices and ear protection, and above all, plenty of common sense. Do remember to enjoy yourself, though.

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Good Woodworking

February 2016

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WIN!
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PERFECT PAIR

Candlestick duo

One ebonised and one finished using paste wax 80

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Good Woodworking News *from the bench*

Comment, insight, views and news of
woodworkers from around the globe

New Axminster APF10 Evolution powered respirator

The new APF10 Evolution respirator from Axminster is not just evolutionary in name. This positive pressure powered respirator eliminates the drawbacks encountered with standard negative pressure face masks. The motor unit blows filtered air down over the face at a rate of 160L/min. Fatigue caused by having to suck through a filter is no longer a problem; breathing is normal and comfortable. The air exiting around the sides and bottom of the mask is at a slightly higher pressure than that outside, thereby forming a most effective seal. Beards are not a problem, and if you wear glasses, these will not fog or mist up as you breathe out.

With the motor and filters mounted on the peak of the bump cap and the battery at

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TOOLS**



Triton TRTA001 Router Track Adaptor

The TRTA001 Router Track Adaptor fits any Triton router to the precision guide tracks used with the Plunge Track Saw 1400W to create laser-straight, rebate or dado cuts where a regular fence attachment or even a router table would struggle – across the middle of a large sheet or fixed surface, for example.

A robust, chrome-plated, low-friction baseplate and guiderails align and lock onto the track with micro and macro adjustability. While designed specifically for the Triton guide track system and plunge track saw, the adaptor is 100% compatible with Festool and Makita track rails. The adaptor costs around £42 from stockists – see www.tritontools.com to find out more.

Starbond CA adhesive

Manufactured in Japan, Starbond CA adhesive is non-toxic, non-flammable, waterproof and has a guaranteed 20-month shelf life, thanks to the triple-distillation process which Starbond undergoes, making it a product of choice when performance, quality and shelf life are an issue.

Starbond CA glue is supplied in a greater range of viscosities, i.e. runniness, than any of its peers. This ranges from the super-thin variety recommended for penetrating and stabilising soft and friable timber to the gap-filling thicker grade. Prices start from £4.20 for 25g, see www.toolpost.co.uk for more details.



Woodpeckers super fence

Available from Woodworkers Workshop – www.woodworkersworkshop.co.uk – one of the most innovative features of the Super Fence is its micro-adjustable offset capabilities, which goes way beyond simple shims normally found with router fences. With its offset capabilities you can set an offset of any amount up to 6mm. To make the offset even easier to use, the two fence halves automatically line up perfectly parallel when tightened down. It also has a dust collection port, variable throat capabilities to handle router bits up to 100mm in diameter and multiple T-Slots on every surface.

The Super Fence not only makes it easier to attach feather boards and sub-fences than any other router fence, it's also the first of its kind to allow for the exact position of feather boards, regardless of the thickness of the sub-fence. The fence is nearly 10mm tall and 125mm deep with heavier than usual wall thickness for optimum support of demanding router functions.

The Super Fence can attach directly to slots spaced 432mm apart from centre to centre and is priced at £229.95.



A tool for all reasons

WOLF Tools' new 'Combat Tool' is a durable and competitively priced oscillating multi-tool, designed for DIYers and Professionals alike. Ideal for sawing, cutting, sanding, grout removal and scraping, it's perfect for trimming skirtings and laminate flooring, cutting inaccessible copper or plastic pipes, cutting square holes in plasterboard for recessing electrical boxes, cutting ceramic tiles and removing old grout. Fitted with a wood cutting blade it also makes easy work of fitting door locks, hinges and can even trim the bottom of a door while still mounted in the door frame!

The tool comes complete with a semi-circular wood cutting blade, delta sanding backing pad, 20 assorted grit size delta sanding sheets, 34, 20 and 10mm wood cutting end cutters, stainless steel stepped scraper blade and a diamond-tipped semi-circular cutting blade. Priced at £34.99, see www.ukhs.tv.



Wham Bam toolbox

Versatile, virtually invincible and great value for money, this new super-tough British-made toolbox is suitable for commercial, hobby or domestic use. Made from a newly developed material designed to resist high impact damage, even at low temperatures, which can make some plastics brittle, the toolbox has a deep graphite-coloured base with a handy removable dual-compartment insert tray and a hinged snap-shut lid in a choice of either silver or orange.

Measuring 400mm long x 230mm wide x 250mm deep, this toolbox is big enough to hold a good selection of hand tools or most hand-held power tools. Strength and durability are what set it apart: close it up and sit on it while you work on a low job, or use it as a step for a few inches of extra height. Priced at less than £15, see www.plasticboxshop.co.uk.



New accessories from Makita

New from Makita is a range of tungsten carbide-tipped reciprocating saw blades, which feature a new shape of sawtooth that gives faster cutting and longer life. Designed to cut through timber where metal

nails or fixings require cutting, these new 1.25mm width blades are available in three lengths: 152, 228 and 305mm. All these saw blades have 6-8 teeth per inch and prices start from £15.

Also available is the new Makita diamond-tipped holesaw kit, which brings together the individual holesaws available in the range. Users will find these invaluable for cutting through ceramic and porcelain tiles or glass in bathroom and kitchen installations. The electroplated diamond-tipped holesaws must be used with the water-feed tube supplied in the six-piece kit, which includes 6, 8, 10, 15, 20 and 25mm diameter holesaws – priced at £78. For more information, see www.makita.com.



ProEdge Sharpening refined

The Robert Sorby ProEdge offers effortlessly repeatable sharpening every time.

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- Sharpens with belts rather than abrasive wheels
- Cuts steel rather than rubbing it off
- Change belts in seconds
- Flat bevel rather than hollow grind
- Wide range of grits and abrasives
- Sharpens all exotic alloys and carbide*
- Belt sharpening lowers risk of overheating

Patented angle setter guarantees repeatability

- Sharpen at exactly the same angle every time
- Nine factory indexed settings provide a guide for all types of tool
- Can be locked between indexes for custom settings



Exceptional Robert Sorby construction

- Built from solid steel
- Pivots for operator comfort
- Inexpensive to run
- Small workbench footprint
- Backed by Robert Sorby Warranty**

Wide range of accessories to suit all sharpening needs



“Proudly made in Sheffield, this deluxe sharpening system is simple, quick and effective in use – ideal for dressing and honing your tools.”

Good Woodworking
December 2015



Robert Sorby
The Robert Sorby ProEdge: Sharpening made simple



Proudly Made in Sheffield, England
Patent Number: 2438962

www.robert-sorby.co.uk

*Carbide tools require use of diamond belt

** Robert Sorby warranty is for 5 years if machine is not used commercially. Guarantees all non electrical parts except wear plate which needs replacing occasionally and with heavy use. Motor warranty is 2 years

COURSE DIARY

What better way to banish those winter blues than to get out and about and hone your woodworking skills?

February

4-5 Bowls & platters

9 Turning pepper mills *

11-12 & 24-25 Beginners woodturning (2 days)

15 Pen making

18-19 Beginners' routing *

24 Kitchen door/jointing

25-26 Beginners' routing

26 Sharpening with Tormek woodturning *

27 Fine-tuning hand tools *

29 Turned boxes

* Course held in Sittingbourne, Kent

Axminster Tools & Machinery

Unit 10 Weycroft Avenue, Axminster

Devon EX13 5PH

Tel: 08009 751 905

Web: www.axminster.co.uk

19-21 Basic woodworking skills – step-up stool project

21-24 Carving in wood – creative development for artists and makers

West Dean College

West Dean, near Chichester

West Sussex PO18 0QZ

Tel: 01243 811 301

Web: www.westdean.org.uk

13-14 Make your own stick for country walking

26-28 Traditional English longbow

Weald & Downland Open Air Museum

Singleton, Chichester, West Sussex

PO18 0EU

Tel: 01243 811 363

Web: www.wealddown.co.uk

3, 10, 17 & 24 Furniture restoration (4 or 8 weeks)

3, 10, 17 & 24 Woodwork club (4 or 8 weeks)

15 Carpentry for beginners – wood puzzle (6 weeks)

20 Furniture painting techniques

21 Carpentry for beginners – set of steps

21 Hand caning furniture (1 day)

27 Introduction to furniture restoration (1 day)

28 DIY in a day – drills

The Goodlife Centre

122 Webber Street

London SE1 0QL

Tel: 0207 760 7613

Web: www.thegoodlifecentre.co.uk

26-29 Beginners' four-day furniture making course

Chris Tribe

The Cornmill

Railway Road

Ilkley

LS29 8HT

Tel: 01943 602 836

Web: www.christribefurniturecourses.com

A shining light for tradesmen

New from Festool is the SYSLITE DUO working light, which features an angled LED configuration for all-round light in a 180° scattering angle and radiates evenly across large workspaces. The power of 8,000 lumens combined with 5,000 Kelvin helps replicate natural daylight and provides optimal illumination of space on construction sites. It features a TPE impact protection and a polycarbonate clear cover to prevent damage being caused by falls, dust and dirt and large cooling elements eliminate the hazard of fire or burning on the contact surfaces of the light.

Transporting the light is made easy by a robust one-hand grip and integrated cord holder, as well as the option of using a systainer.

Priced at £297.60 – see www.festool.co.uk.



Paying homage to oak

Jack Badger has been nominated for an International Product Design Award with their project 'Wide Oak Flooring'.

In this ever disposable world Jack Badger have approached the subject of flooring with a focus on sustainability and efficient use of materials. Inspired by trips around period properties, such as Haddon Hall and Little Moreton Hall and the like, they have adopted age old methods of making and fitting their oak floors.



Designed to last and minimise waste when manufacturing, the company lay their floors in traditional bays and finish them with traditional hand tools, combined with the use of a modern computer-based planning system that works out the bays as you enter the timber used.

Every board in a Jack Badger floor is numbered and entered into an overarching room plan after being machined to its maximum size in the workshop. Due to this every board is completely different from the next making them entirely non-standard. This requires a level of intelligence in the process, which is where the home-built computer tool comes into its own.

Jack Badger feel that due to every tree being a different shape and size and unique in their own right, it is only fair that they utilise the whole of every plank. In essence, this pays homage to the life of the tree, which in the case of oak is a very long time indeed. For more info, see www.jackbadger.co.uk.

Upgrade to Tree Alert pest reporting tool

Tree Alert, the Forestry Commission's online tool for reporting suspected tree pests and diseases of concern, has had an upgrade. The app has been a valuable tool for forestry and other tree professionals and people with knowledge of trees and woods to help the Forestry Commission monitor key pests and diseases of trees. It has also been used to particularly good effect by the 'Observatree' group of trained volunteer surveyors around the country. In a very practical application of 'citizen science', these volunteers have used it to report suspected problems, including alerting them to an outbreak of Oriental chestnut gall wasp in sweet chestnut trees in St Albans last summer. Without Observatree, that outbreak might not have been detected until it was a much bigger problem.

The Tree Alert online facility is available on the Forestry Commission website: www.forestry.gov.uk/trealert.



OFFCUTS

The FFX Tool Show will be returning to The Kent Event Centre in Maidstone, Kent from 26–28 February. The full Line-up, times and ticket registration will follow soon. See www.ffx.co.uk

Mortise & Tenon magazine is a print publication currently under development, which seeks to bridge the worlds of furniture maker, conservator, and scholar. *M&T* exists to showcase premier furniture artisans and scholars in an elegant and artful manner. The magazine is printed on uncoated 70# matte paper with a minimalist photography-saturated aesthetic. Pre-order your first issue today from Classic Hand Tools – www.classichandtools.com.

Issue one is currently being produced with an estimated arrival of February

The best achievements in technical innovation and professional development within the joinery and woodworking sector have been recognised in five of the industry's most prestigious awards. The BWF Annual Dinner & Awards 2015, hosted by BBC business and economics journalist Declan Curry, took place on Friday 20 November at the Law Society in Chancery Lane. With a record number of entries, the judges had to choose between a number of ingenious innovations and outstanding examples of personal and business excellence

Good Woodworking Free Reader Ads

Machinery

Elektra Beckum bandsaw model BAS315-4 GWN55 in excellent condition with Elektra Beckum dust extractor SPA1000, complete with dust bag, hoses, etc. £400
☎ 01795 873 589 (Kent)

Harrison Graduate woodturning lathe, 54in bed length, 18in over the bed, Speed Genie variable control, centre steady, 12 and 8in faceplates, Axminster Goliath chuck and jaws, four toolsets, four 4in faceplates; £1,500 ONO, buyer collects
☎ 01772 613 044 (Lancs)

NuTool HS1500 table saw; £50 ☎ 01543 424 434 (Staffs)

Myford wood lathe, 32in bed on stand, 6in faceplates, box of tools, various turning blanks. Call to make an offer
☎ 01255 425 058 (Essex)

Record DML 24X lathe with record power chuck, plus 12 chisels and a quantity of hardwoods, including yew, holly, apple; £150
☎ 01939 290 405 (Shropshire)

Miscellaneous

Axminster cast-iron mitre trimmer, as new; £60. Electric motor, 550W, 240V, 1,400rpm; £40
☎ 01162 415 548 (Leics)

Scheppach HS100E circular saw bench, unused; £120, buyer collects
☎ 01233 638 039 (Kent)

7in woodworking vice – £55; carpenter's toolbox – £30; skew planes (Record and Stanley) – £230
☎ 0208 641 4238 (Surrey)

Power tools

Bosch GOF 1300 Ace ½ router with micro adjuster, side fence – for DIY use only. Very good condition; £75 + P&P, or can be collected
☎ 01482 706 283 (E. Yorkshire)

Bosch 900 Ace ¼ router with micro adjuster and side fence; £50 + P&P, or can be collected ☎ 01482 706 283 (E. Yorkshire)

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Andy King

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Make your mark

Recently discovered, these three marking solutions from Pica-Markers cater for most applications from finer work through to basic identifying marks



▲ The slim nose design allows the Pica-Dry to mark through jigs easily



I recently stumbled across Pica-Markers by chance, with the Pica-Dry catching my eye. Further delving revealed a whole range of marking products that are a little different from the norm and enough to warrant further investigation!

Pica-Dry

For those of us working with mainly planed stock or sheet materials, the Pica-Dry is likely to gain the most interest.

The Pica-dry is a sort of cross between a propelling pencil and a clutch pencil, incorporating the click advance of the propelling pencil to advance the lead at a controlled rate along with the thicker and more robust (2.8mm diameter) lead of the clutch pencil, which allows pressure to be made without snapping.

The long, slim design is certainly useful for getting into tighter spots, and if needed, the

lead can of course be extended that bit further to make a mark in even tighter spots.

The lead supplied with the Pica-Dry is water soluble and makes marks on most surfaces, wet or dry, and that renders it very handy for marking up most materials, and although a little soft for finer marking of joinery or furniture work, there is a standard, harder 'H' lead available, ideal for this side of things.

Alongside this is a range of water soluble coloured leads that again mark on most surfaces. These are well worth keeping in the tool box, and with specific leads designed to be resistant to water jets, they are ideal for marking up ceramic tiles for drilling or cutting.

A further range for standard marking is especially useful on darker materials, and if you regularly fit kitchen worktops where shiny, darker laminates are always tricky to mark up, these will find (and make!) their mark immediately.

Pica-Marker products



▲ The extending lead also proves useful for marking through fittings for hole positions



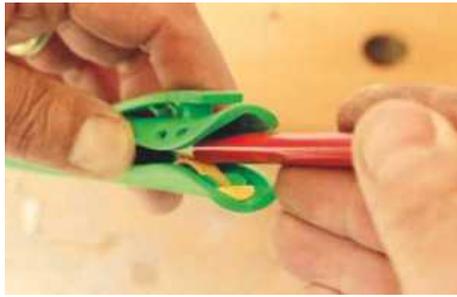
▲ With the 'H' leads, the Pica-Dry is ideal for general marking up work



▲ The coloured leads work brilliantly on dark and glossy surfaces



▲ A handy sharpener is built into the end of the scabbard



▲ The 'Classic' carpenter's pencil is held firmly in the holder with a spring clip



▲ A simple sharpener is used like a knife, although only suitable for right-handed use



▲ Marking up on dusty rough timber is one of many applications the Pica-Visor is capable of

options: the Classic 540 pencil is a 2H lead, ideal for general marking up in carpentry applications, while the Classic 541 version is designed for more abrasive materials, and aimed at stonemason-type work with its ultra-hard 10H lead.

The supplied pencils are 240mm long and are well protected by the scabbard, which has a pressure clip that holds the pencil right down to a stub. It also has a stainless steel blade built in for sharpening the pencil as needed. This is used like a knife but the design makes it only suitable for a right-hander to use.

Construction

The Pica-Dry is well constructed with a robust plastic upper and slim stainless steel lower sleeve, although the upper body is thicker than a standard pencil.

It's essential for me that a pencil fits behind the ear so it was the first thing I checked – and it does! If you don't use your ear, the Pica-Dry comes complete with its own plastic scabbard that can be clipped to the belt or pocket for easy access; the scabbard also has a nifty little built-in sharpener to keep a sharp point as needed.

Pica POCKET

The Pica range follows similar traits with each marker or pencil having its own belt or pocket-mounted protective scabbard, and if you prefer the more traditional flat lead carpenter's pencil, the Pica POCKET offers two

Pica-Visor

Outside of more accurate marking up there's often a need to make fast identifying marks; marking up rough boards prior to sawing, identifying sawn components as you cut them and so forth.

The Pica-Visor is designed for this sort of application and has a specialist wax formulation that is equally at home writing on wet, dry, shiny, rough or dusty surfaces.

It leaves a permanent mark so will prove useful for fast identification of materials in storage; timber being air-dried outside on racking or wood blanks for turning, for instance.

There is a range of hi-vis colours available, including fluorescent as well as standard black and white options, and once again, the Pica belt clip scabbard is included.

Conclusion

The markers tested here only give you a small glimpse into what is an extensive range of marking solutions, although these three products cater for most applications from finer work through to basic identifying marks.

The Pica-Dry is where most of us doing a crossover of bench and on site work will likely find ourselves leaning towards. Buying one doesn't involve a massive outlay, and with the multi surface marking ability, plus the coloured lead options, it's certainly well worth the investment. **GW**

We have 50 sets of Pica-Dry & Pica POCKET pens up for grabs – see page 79

Good The Woodworking Verdict

+ Pica-Dry writes on most surfaces; all-in-one solution for most marking up; Pica-Visor writes on any surface, permanently

– 'Classic' sharpening is for right-handed use only

Rating ★★★★★

Typical prices: Pica-Dry – £10.79; Pica POCKET – £7.79; Pica-Visor – £8.39

Pica-Dry:

Lead diameter: 2.8mm

Leads: Water soluble; 'H' grade; water soluble coloured; water jet resistant coloured

Pica POCKET: H and 10H leads

Pica-Visor: Permanent, bright colours available

Web: www.garrisonsdales.co.uk

Prices

Our product prices reflect typical values as we go to press. We cannot guarantee these prices, though, and thoroughly recommend that you shop around.

How we rate...

- ★ Don't get your hopes up or your wallet out!
- ★★ Well, it works but really needs improvement
- ★★★ Performs well, but you will find better
- ★★★★ Great performance and value for money
- ★★★★★ So good, even Andy would get his wallet out!

A cracking little accessory

If your workshop is home to regular glue-ups then this clever device will prove invaluable – every workbench should have one!



I guess I can't be the only one who glues up by making do with bits of stick or a finger to spread the adhesive over the joints? I've also tried the brush route as well. The latter works really well, but by the time I've got everything glued up and clamped, I've invariably forgotten to clean the brush and it's rock hard next time I need it... sound familiar?

So having recently been shown this clever glue pot, it seems to be the answer to my problems: no more bits of stick, hard brushes or wiping the excess glue on my jeans!

Nifty design

Made from a polypropylene type plastic it is durable, and while a rigid container, it has a composition that isn't brittle so will take plenty of knocks and scrapes.

Its simplicity belies its effectiveness in not only storing glue and keeping it readily

to hand, but also keeping it fresh and ready to go while also stopping the brush from going hard and therefore unusable.

It does this by having a large container with a 0.9 litre capacity. The lower reservoir maintains the glue at a set level within it, and within this the glue brush is dipped, with any excess wiped away on the crescent lip before moving it to the work.

After the glue-up is complete, the conical lid is placed over the top of the brush within the reservoir, sealing it from any air so that it remains fresh and fluid ready for the next time you use it.

Conclusion

If there is a long period of inactivity, then the brush should be cleaned but in a 'shop that does regular glue-ups, this is a cracking little accessory and a bargain to boot. **GW**

Good The Woodworking Verdict

- + A brilliant way to keep glue ready to use; very durable
- The brush is cheap and cheerful, although easily replaced

Rating ★★★★★

Typical price: £7.74

Capacity: 0.9 litre

Brush: 25mm

Web: www.toolovation.co.uk



▲ The glue container is tipped on its end to allow the glue to be poured in



▲ In its normal position, any excess glue can be wiped off on the lip



▲ After use, the conical lid can be placed over the reservoir with the brush inside



▲ With the lid securely in place the glue stays fresh ready for the next use



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Woodwork Course 1 (Tools and Things)

A self-interest woodwork course where the aim is to give you the confidence and the knowledge to use basic hand tools and some of the more common power tools.

You will be able to pick from a list of projects before you arrive that I believe you can complete in 5 days or less so that you will go home with one of them and you can proudly say "I made that".

I cover the teaching of how to handle tools by getting you started on your project and, as you need to use a new piece of equipment, I show you how. This means that the instruction is fresh in your mind and you do the task there and then.

On all courses there will only be a maximum of 4 at a time, this will mean that I will be available when you need help and advice.

Woodwork Course 2 (Wood and Things)

This is a continuation of course 1 (tools and things) with the emphases on timber, what are acceptable defects in timber and what isn't, how do you write out a cutting list that means something to your supplier, what to look for when buying wood and what to avoid.

You will ideally have done course 1 (tools and things) or have a good working knowledge of how to use hand tools and have used hand held power tools.

The projects for you to pick from will be more complicated and will involve the use of the more sophisticated hand tools and hand held power tools and will include using some of the static power tools in the workshop. We will also be looking at buying timber, making cutting lists and drawing plans.

Woodwork Course 3 (Project Days)

The advanced course is rather different from the previous two.

To come on this course you will need to have done both the other courses and have used your skill at home on your own projects and be ready to take on something more difficult.

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The Wood Workshop

7-8 Redhills Business Park, Penrith,
Cumbria CA11 0DT

www.woodworkshop.co.uk

A compact and punchy little saw

This nifty saw from Charnwood is ideal for speeding up the task of fitting pre-finished flooring and also comes complete with some additional features



I've fitted plenty of laminate, engineered and other flooring over the years, and while a mitre saw, jigsaw and multi-tool are invaluable, it's normally when I need to rip a run of boards down that it's more of a task. The jigsaw is OK, but a neater and quicker option is to use a table saw. Carting one of those on site isn't always practical, but Charnwood seem to have an ideal solution with the TSV150.

Compact cutting

It's a clever concept: a compact table saw with a cutting capacity of 30mm depth – enough to cope with standard, thinner laminate flooring

as well as more traditional common board thicknesses of 22mm, so it's not exclusive to the laminate market. It would also suit any smaller craft, hobby or other such work, such as for dimensioning box components.

Maximum ripping width capacity isn't huge at 150mm, but that allows a board of 300mm to be cut economically, and it's rare you get finished flooring beyond this, so it's a well thought out machine in this respect.

Up to the task

It's up to the task as well: the saw is driven by a 1,100W motor and running through some 22mm-thick solid oak flooring was no problem. Needing to rip down some 30mm-thick softwood door lining, I saw this as a good opportunity to try it at its deepest capacity. Again, no problem, although a steady feed speed is recommended: too fast and it will start to slow, but I found it can be fed through at a decent rate.

Longer stuff will need some support on the



▲ The blade will tilt using the combined tilt and locking knob



▲ Ripping solid oak flooring is well within the saw's remit



▲ The cross-cut fence on the TSV150 is basic but works as it should

Charnwood TSV150 table saw



▲ A simple pull-out side support is useful for wider stock



▲ The neoprene bag slips over the air inlet spigot and is reusable



▲ Lift this cover and the supplied hose can be used for general cleaning



▲ It works very efficiently, but is restricted by the short hose



▲ The vacuum has its own independently powered motor



▲ With its robust canvas shoulder bag, the saw is easy to transport

outfeed as the table is small, but the weight of the saw is enough that when feeding the stock through, it remains stable and doesn't move around as you progress.

'Trade' rated

The full length fence is decent enough and locks with two cam-type clamps. Setting the ripping width to the etched scales on the saw table makes it easy to work a set width and they proved pretty accurate, so they can be relied upon without having to check with a rule.

Ripping solid stock on a full length fence can cause pinching as stresses are released, so you need to be aware of this, although in general, most interlocking solid flooring tends to be random shorter lengths, and all of it is very dry and isn't so prone to movement, but you should be aware that there is still a risk of a board occasionally nipping as you cut.

The table has a single slot for the supplied mitre fence; this fence is certainly not the highest of quality but does the job of cross-cutting or mitring a board to size well enough, but the plastic construction is definitely not in its favour, especially with Charnwood's 'Trade' rating for perceived usage.

Even so, for me the 'Trade' rating doesn't really imply that it can be worked hard and non-stop for hours on end; this is a saw for doing the start or finish cuts against walls, trimming cuts and so forth, so will only be used

intermittently for a few minutes at a time.

And with this in mind, as a saw it does a solid job, and in its own right, the portability and power makes it worthwhile for smaller projects and thinner stock in the workshop or out and about.

Vacuum extractor

But it's the addition of a built in vacuum extractor with a separate motor that's the sublime touch, especially as it can be used as a standard vacuum cleaner as well to clean up any small areas of debris.

The vacuum sits below the saw table acting as a base and is easily accessed with a set of toggle latches. A durable and reusable neoprene dust bag sits within the base and links directly to the saw to deal with the sawdust as you cut, and it does this very well.

A sliding shutter seals the base to ensure maximum vacuum pressure in this mode, and by sliding the shutter up you can then use the supplied hose to do basic clean up around the work area as needed. A couple of vacuum heads are included for this, and again, they do a great job; the downside being the very short hose length, but bear in mind it's an additional feature suitable for small localised areas and not the whole room.

Each motor is independently switched with a standard NVR for the saw and a rocker switch for the vacuum and both have to be engaged for the saw to be used with the vacuum extraction.

Conclusion

Supplied with a heavy-duty canvas carry bag, the TSV150 is a compact and punchy little saw, and if used to its specified usage, is a great way of speeding up the task of fitting pre-finished flooring.

Unfortunately, it's let down by a cheapening of components here and there to hit a budget, but used with this in mind, the TSV150 is a nifty saw with some great additions that takes up very little space. Definitely worth a look if you're in the market for such a product. **GW**

The Woodworking Verdict

+ Compact, powerful saw; direct built in dust extraction; vacuum can be used independently

- Cheap mitre fence; vacuum hose is quite short

Rating ★★★★★

Typical price: £199

Table size: 280 × 405mm

Table size with extensions: 355 × 405mm

Motor: 1,100W

Blade diameter: 150mm

Max depth of cut @ 90°: 30mm

Max depth @ 45°: 15mm

Vacuum motor: 1,200W

Hose diameter: 32mm

Weight: 11kg

Web: www.charnwood.net

Bevel-up beauty

This plane may be a tad specialised for some and does have its limitations, but even so, it's bound to be a hit with hand tool enthusiasts



This particular plane isn't exactly new; it's been on the market for a while. I've had this one on the bench for the last few months and it's been put through its paces over a period of time, so let's see if it hits the mark. With Veritas now having the ultra-durable PM-V11 steel among the options of cutter composition in their range, you can now choose this, or the more commonplace O1 and A2, so this plane has all three steels on offer,

so the user can choose what they like best. Unlike the other low angle bevel-ups in the Veritas stable, there is only one bevel angle available here. At 25° along with the bedding angle of 15°, that makes it around the same as a low angle block, so while the steep pitches

available on the others will work very well with interlocked and wild grain, this one is set at this single option unless you regrind.

Designed to make long rebates and rabbets, and with the long sole of 385mm, it's ideal for sinking and fielding big panels. Alternatively, you can use it to cut and fit fine, long rebates and tongues or clean up and fettle machine-made ones. You could of course use a standard rebate plane for this, but like the carriage planes of old, this one is aimed specifically at working long rebates and rabbets.

I found it is far more comfortable than a smaller Record 778 or Stanley 78 equivalent over extended periods, and the longer sole removes any irregularities in the workpiece where a shorter rebate plane will follow them.

Nickers

I also found the extra heft of what is essentially a bench plane designed for rebates also gains a better finish in general in comparison to a smaller 778 type rebate plane, which although perhaps not essential for a joint that tends to be hidden, a fine finish aids assembly.

Cross-grain work needs a scored line either from a cutting gauge or with a dedicated nicker to prevent tear-out, and the smaller, ordinary rebate planes have a rudimentary cloverleaf version on one edge, whereas original carriage planes don't.

Veritas has fitted their own round scoring wheel, which is fully adjustable for depth and projection – you can find one on either side of the plane. That could have you thinking they've made it usable for the left-hander as well as the right-, but it has a better advantage of allowing you to work with the grain no matter which way it lies, so the finish is always at its best.

A skew blade offers a better finish on cross-grain work, but to get around some grain problems you need a right- and left-hand option, and that's an expensive solution, so the dual nicker at the cost of a marginally slightly inferior finish in most instances is a trade off I can live with! Of course, you can also move the mouth up tight to the blade to keep tear-out to a minimum, and this follows the current Veritas design of the mouth enclosed within the sole, along with a small setting screw to prevent it clashing with a freshly-honed edge as you move it closer.



▲ The fence bars screw in securely to tapped holes in the body



▲ Collet-style locking collars secure the fence to the bars at the desired position



▲ The enclosed mouth slides freely. An adjustable stop restricts the opening



▲ You can pivot the rear tote to gain a better position when doing bevel work

Adjustable tote

This tilts left or right to gain knuckle clearance if you find yourself in a tight spot, but also handy if you are bevelling a field on a panel to get a more upright handle.

Blade adjusters

Blade adjusters are the usual Norris style with lateral adjustment built in, with set screws in the wings of the ductile casting to retain a setting once established so that the iron remains square to the sole.

The fully adjustable dual rod fence allows you to plane up to 134mm from an edge, and it's drilled for a facing to be attached. This can be useful for bevel work as you can screw a specific bevel facing to set the plane angle.

The fence

The fence locks off with the again familiar Veritas collet-style brass knobs and it can be fitted to the left or right of the plane. All in all, this is a plane that has everything going for it, with the exception of a depth stop for setting the depth of a rebate. This is certainly an oversight on a tool that is predominantly used for this task, but a pencil or gauge line can be used as a target to finish to.

Conclusion

While I said it's not a plane you'd reach for in general, in fact, a carriage-style plane could prove a very useful bench plane for general use as well as the rebate work. You can't camber the blade or knock the corners off, though, as it then affects its panel and rebating ability, so it does have limitations in this area.

Even so, the hand tool enthusiast will love it, and in a joinery shop, a bit of fine fitting work on longer stuff – shooting in a rebated set of doors, for example, is an ideal application.

The usual high price that you have to pay for quality would normally put a few off, but Veritas prices in the UK have recently undergone a 30% price drop across the board so there's never been a better time to buy.

In the case of this particular model, the high quality and performance alongside the making and fitting options the plane can give to the hand tool aficionados means that it should attract plenty of interest. **GW**

Good The Woodworking Verdict

+ Works well left- or right-handed; adjustable tote; superb to use

- No depth stop for rebates; perhaps a tad specialised for many woodworkers

Rating ★★★★★

Typical price: £252.94

£261.20 (with PM-V11 blade)

Weight: 2.7kg

Fence capacity: 133mm

Cutting width: 57mm

Sole length: 385mm

Web: www.brimarc.com

Pyramid precision

Despite there being other anti-slip workholding devices on the market, this offering adds an extra dimension, which helps these TriGrips stand out for all the right reasons



I'm sure we've all seen or own a set of anti-slip blocks for the bench and there are various shapes and configurations that offer

a similar application. Milescraft has gone that little bit further with theirs and although a simple adaptation, a very nifty and clever addition that gains an extra dimension to the norm.

Triangular profile

Opting for a triangular profile over the normal round or square ones out there, it's the addition of a point on each triangle that now allows them to stand on end and act as pins to apply finishes; ideal when working the underside of a piece, flipping it so that it sits on the pins and then allowing the edges and face to be finished, leaving just small point marks on the underside when dry.

Lightweight, smaller work can slide on the points if you are using thicker finishes that drag as they are applied, but in general, the TriGrips do a great job on heavier and bigger work.

Increased stability

Stability issues when up on edge are addressed twofold by having a rubber non-slip pad on the edge of the triangle to keep it secure, as well as the actual block being hollow and filled with fine ballast. This allows the ballast to move around when the grip is placed flat or on end so it's always bottom heavy no matter which way it is positioned, thus increasing its stability.

Conclusion

The rubber is thick and quite dense and does a great job of gripping the bench as well as the workpiece while lifting the work up high enough to rout edges without restriction as



▲ The cleverly positioned points allow work to be held securely and also ensures the workpiece will not slip

well as any other sanding or prepping work, and for any routing, sanding or planing work, it is equal to any other block on the market in terms of its ability to hold the work securely.

It's the addition of the points that make it stand out, though, and just for this alone the Milescraft TriGrips are worth considering against the more conventional versions out there. **GW**

Good The Woodworking Verdict

+ Points for applying finish; triangular shape allows a little more diversity

- Light or smaller work can slide on the pins when using thicker brush-on finishes

Rating ★★★★★

Typical price: £14.10

Raised height when flat: 30mm

Raised height on edge: 75mm

Web: www.toolovation.co.uk



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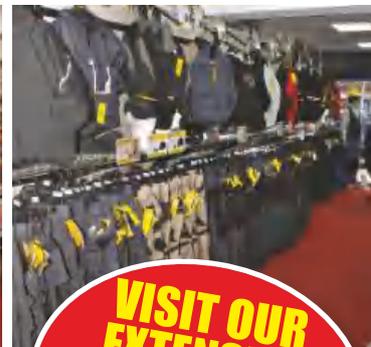
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Rediscovering spokeshaves

Continuing to find unexpected enjoyment in his chair project, **Jeff Gorman** discovers a new aspect to spokeshaves

In *GW296* I wrote that apart from the seat weaving, the fun bits were almost done. However, after a hard look at the back rails I decided to enliven the design by narrowing the top rail's central section with a gentle curve, and to make the outer curves somewhat bolder, (**Pic.1**). This meant that I needed to slightly change the small chamfers I'd marked, (**Pic.2**).

The reshaping was fun because I discovered an aspect of spokeshaving I'd not previously appreciated. Ash is a wood whose springtime growth mostly consists of annular rings of tubular vessels. This job is a rather special case where the curves meet the growth rings at a very thin angle, (**Pic.3**). Since these rings are relatively hollow, it is not surprising that they cut more readily than the adjacent rings of summer growth. While working I realised that although the spokeshave's narrow face allows it to work concave curved faces, the same narrowness lets the cutter sink into the softer regions, creating the subtle effects I've marked, (**Pic.4**).

The skilled eye can easily detect the difference between sloppy workmanship and the small irregularities that develop during competent hand working, so I concentrated on forming nice flat, narrow chamfers with sharply defined arrises. Had I wanted more perfectly uniform surfaces, I would have had to spend time working the harder areas with a fine file and scraping out file marks with my penknife blade (and while I was at it, possibly



◀ Pic. 1 The unfinished chair showing the modified top rail

Tip

If you have small children to entertain, a stick of wood and a spokeshave can guarantee hours of activity and a pile of shavings that they will treasure

Tip

Lubricate the spokeshave face with a rub of candle wax for better use. Also, try using an epoxy resin (Araldite, for example) adhesive when re-facing a 'shave with brass



▲ Pic.2 I used a block plane to form an arch-shaped arris



▲ Pic.3 Here the 'shave cuts almost parallel to the grain



▲ Pic.4 Variations in the wood's hardness caused these irregularities



▲ Pic.5 The action of a wooden spokeshave is similar to a controlled knife blade



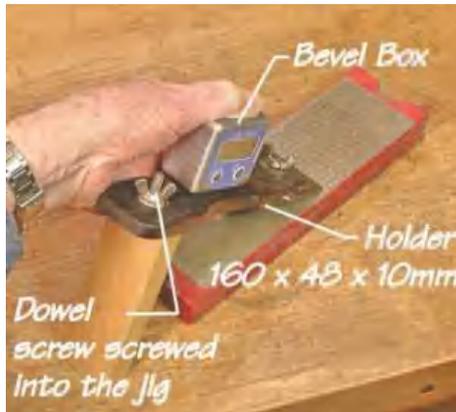
▲ Pic.6 The wood's eye view of a brass-faced wooden spokeshave



▲ Pic.7 The metal spokeshave resembles a very short plane



▲ Pic.8 I held the rail between clamp heads, while the 'shave was pulled



▲ Pic.9 Here's a simple sharpening jig for metal spokeshave irons



▲ Pic.10 A diamond hone can do the job of forming the 30° sharpening angle

Jargon busting

Set: The projection of a plane's cutting iron beyond the sole

Arris: The line formed at the intersection of two surfaces

Skitter: What happens when a plane cuts, jumps forwards a little and then cuts again, rather like a stone bouncing along the surface of a pond

depriving the job of a bit of character?). Abrasives would not have been an alternative because it would also have followed the grain and its use would have risked softening the arrises, thereby spoiling the highlights that enliven the chair's visual appeal.

Spokeshaves

A tyro's first thought in approaching a spokeshave might be to think: "Here are nice long handles to grab," but this is a tool to be handled with the fingertips (Pic.6 and Pic.7), with most of the motive power coming from the thumbs (or when in 'pull' mode, from the fingertips) and with only sufficient downwards pressure to give firm contact with the wood.

Although metal 'shaves would have served, I chose to use a couple of my wooden-but-brass-faced tools, partly because I enjoy the

sense of more direct control from the knife-like tool (Pic.5) rather than the plane-like metal tool (Pic.7) that I find more likely to skitter when it meets a harder piece of grain. I also find it easier to turn the wooden tool into pulling-mode, (Pic.8).

To get the knack of using the wooden 'shave, one has to offer its toe to the wood and rotate the wrists until a tentative push reveals that the edge will bite. During the rest of the stroke, the challenge is to keep the 'shave on a level keel while concentrating on flexing the wrists to maintain the cutter action.

Sharpening

Metal 'shaves have the blade bedded at the familiar 45° to the sole, and the short blade usually has a 25° grinding angle surmounted by a 30° sharpening angle. Such a short blade is, of course, difficult to hold, so like most people I fit my spokeshave blades into a kerf sawn into the end of a handle-shaped slab of hardwood, (Pic.10). By dint of a bit of trial and error I used the often-invaluable 'Bevel Box' (GW206) to determine the height of the jig needed to set a 30° angle. To drive a dowel screw into a pre-drilled hole, I locked two nuts together.

Before the advent of affordable diamond hones, I used to dislike using a set-on-edge

oil stone for sharpening tanged blades, (Pic.5). I found it hard on the fingers, difficult to get a uniform sharpening angle and to form a smoothly curved edge. However, with the blade held (though not by the ends of the tangs!) in a vice (Pic.10) and when using an affordable plastic-backed diamond hone, I can see what is happening, and to be candid, find myself more willing to touch up an edge.

Having checked my cutter, I find that its backface is at 90° to the marked face of the tang, (Pic.10). If this face is set at 60° to the vice jaws, holding the hone parallel to the jaws will produce a sharpening angle of 30°. Since 'shaves are usually worked on narrow surfaces, I can deploy the old trick of fixing the blade with slightly less set on, say, the right-hand end than the left, thus allowing me to reduce the cut by sliding the 'shave towards the right.

Now I think I've dealt with my second thoughts, I wonder whether I can get on with the final assembly and seat weaving? 

Information

Dowel screw – Screwfix
www.screwfix.com

Bevel Box – Axminster Tools & Machinery
www.axminster.co.uk

Squarely does it

Jeff Gorman creates a custom jig that makes accurate sanding easy

When it comes to the polishing stage at the end of a project, I really enjoy watching the grain and the colour of the wood being brought to life. Sadly, it's a process that can also reveal flaws in the work, such as the slight curvature on the corners of the lid of the upper box in **Pic.1**.

I made this box around 20 years ago, and it shows what can happen if you're careless when using abrasives. Even when trying very hard to sand accurately, narrow edges can be spoilt by a rocking action of the hand that introduces a slight camber to the sides. For the lower box, I used my custom-made sanding jig in conjunction with a shooting board to give the box truly flat edges and clearly defined arrises.

The sanding jig shown in **Pic.2** and detailed in **Fig. 1** is designed to take 280 × 115mm pieces of abrasive (that's a half-sheet in old money), each grade being mounted on its own 3mm hardboard backing using Photo Mount or a similar aerosol adhesive. If you'd like to make a sanding jig of your own, any hard-wearing hardwood will do the job, but as ever I recommend European beech, which is the traditional wood for workshop accessories.

As you can see from the drawing, construction of the jig is quite straightforward, but bearing in mind that this is a hand tool, I think it's worth putting some time into making a comfortable handle, or tote.

More than a handle

Pic.3 shows my idea of a good tote, which can be made from a piece about 200 × 40 × 40mm. The job is made much easier if you hold the workpiece in a carver's chop, which is shown

Tips

■ When working narrow stock, you'll obviously only be using a narrow section of abrasive, and its surface can quickly become clogged. Keep a brass brush to hand to clear the debris from the surface of the abrasive paper



▲ **Pic.2** The sanding jig at work on a shooting board; offset pad protects the fence from damage

at work in **Pic.4** and, in case you fancy making your own, shown in detail in **Fig.2**.

Start by radiusing the top outer arris of the handle, and then transfer the outlines of the shaped sections from **Fig.1**. Working in two stages, saw the outline of the underside's profile. Using a rasp, or better still a half-round milled-tooth (or Dreadnought) file, form the large chamfer around the thumb. Shape the forward part of the underside to find a comfortable resting place for your index finger. Complete the shaping to find the best position for your remaining fingers.

Form a slight camber on the tail of the handle, and use a flat file to radius the

forward end as shown on the plan. (B on **Fig.1**); complete the smoothing with ordinary bastard files and abrasives.

Taking the dimensions in **Fig.1** as a guide, angle the finished handle on the sanding jig and screw it into place; form the bevelled face labelled 'a-a' on **Fig.1** by planing away the projecting section.

◀ **Pic.1** Square arrises and flat sides make all the difference to the finish of the lower box



▲ **Pic.3** This view should explain why I shaped the tote this way

When it comes to the backing boards for the abrasives, you can save yourself some time by preparing several boards, clamping them together, and then drilling through them all in one go. Note that, in order to protect the end of my shooting board's fence, I have set the face of the pressure pad back from the bearing face of the skid.

Finishing the jig

Remember that grains of abrasive can be left embedded in any sanded surface, so to prevent unwanted wear on the shooting board, avoid sanding the underside of the skid. Finish the jig with a few coats of raw linseed oil, remembering to dispose of the rags carefully. Use an adhesive spray such as 3M Photo Mount to fix the abrasive to the jig.

Jig for custom sanding



▲ Pic.4 The carver's chop: handy for holding irregularly shaped workpieces...

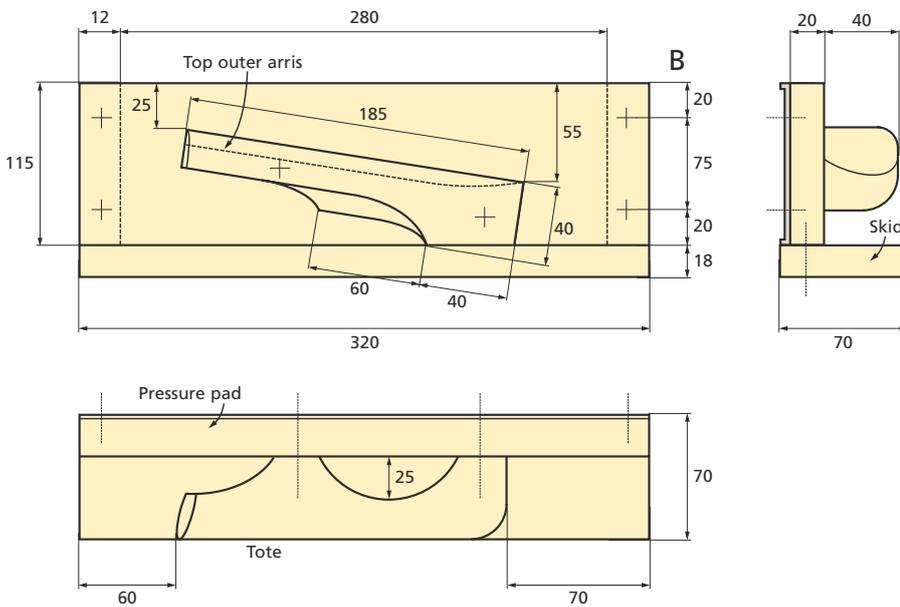


▲ Pic.5 ...such as the ergonomically shaped handle, or tote, on the sanding jig



▲ Pic.6 This simple jig holds thin stock securely when making paring cuts

Fig 1: Custom jig: how it's made

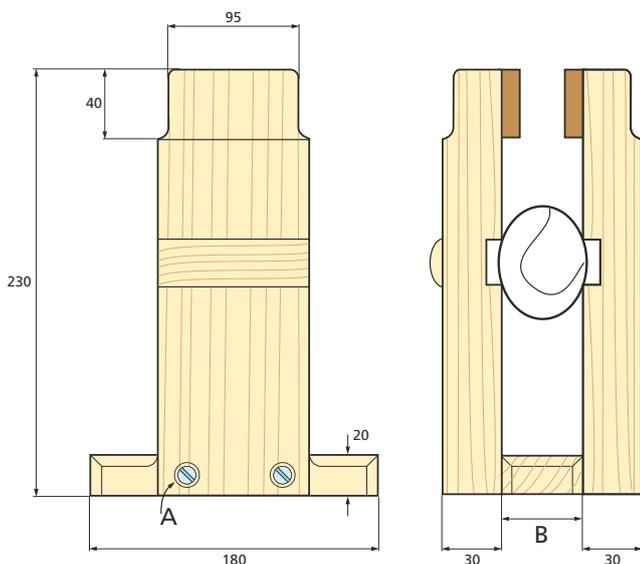


Working thin material

Just before I go, I thought I'd mention the handy jig shown in **Fig.3**, which comes in useful when making partitions in a box, say, when you often have to saw and then pare a row of housings. When it comes to the paring (**Pic.6**), you can try gripping the edges of the workpiece between the jaws of your vice, but this can be quite a risky approach: the position of the gauge lines often limits the depth to which the job can be inserted, and the pressure can crush softer timbers and split off the arrises. Also, if the jaw edges have become rounded through wear, a hefty thump on the chisel could easily make the workpiece jump out.

The answer is to make yourself one of these thin-stock jigs. As usual, I suggest using a piece of European beech for this. The fence need not be glued in place but can be simply fixed with three countersunk screws so that it can be replaced easily. For comfort, chamfer the front edges, then finish with traditional raw linseed oil as before. **GW**

Fig 2: Carver's chop



The carver's chop has made several appearances in *GW*. Even if you don't intend to make this tote, you may find this accessory well worth making for holding irregular objects, and also as a makeshift metalworker's vice

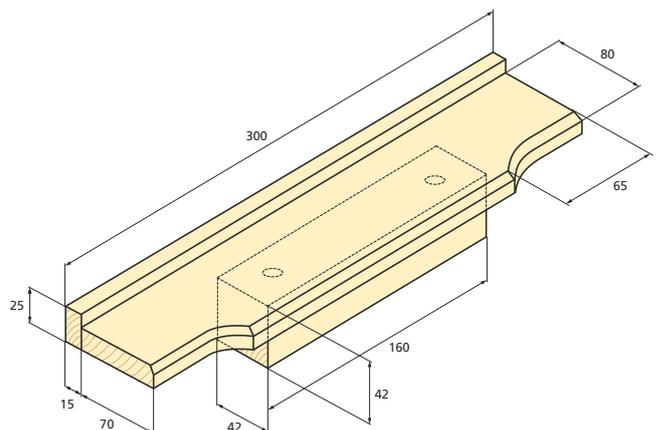
Jargon busting

Arris: The sharp edge where two surfaces meet at an angle

Camber: The slight convexity of a surface, just like you find on a metalled road

Pare: To remove fine shavings with a chisel

Fig 3: Lath board





Squaring up a piece of beech for a coffee table

Back in the fold

Founding Editor of *Good Woodworking* **Nick Gibbs** returns with a new column and this month tells us how he's making a welcome return to his shed after a serious road accident 18 months ago



A carving of the 11th hole at St Andrews



Planing an edge of the beech with a Clifton plane



The shed now has a Record Power BS250 bandsaw, with new blades from Tuff Saws

My shed is medium-sized, with a small Charnwood lathe, a small Record bandsaw and a small Woodstar pillar drill. The bench is specially designed, with an angled top for space. Like many woodworkers, I hide in there for peace and tranquillity, devising better layouts and making projects to stay busy. 18 months ago I was in there making a coffee table with turned legs, using beech recycled from a broken table. Distressing and staining were set to complete the job when I was knocked off my bicycle in June 2014, ending up in a coma for 10 days. Thanks to damage in the frontal lobe (where the 'executive functions' work), the magazines I owned and ran then have since been suspended or passed on elsewhere, and now at last I am back in the shed, woodworking and catching my breath.

Recent projects

The coffee table I abandoned was set to feature in the Haynes book, *Make Your Own*

Furniture. That was initially shelved, but I am hoping to get it done now by April, for publication in the autumn. The prospect of relearning SketchUp to draw the illustrations frightens me terribly as my memory has been heavily dented, and I panic when faced with too many tasks. But it is good to feel there is some purpose to time spent in the shed, with past projects almost always inspired and driven by articles in my magazines or tests of new kit.

I am fortunate to have my little business Fairway Originals to keep my spirit alive, by carving replicas of favourite or famous golf holes. I have done this for years, and in 2015 accidentally gained a marvellous commission to make a leaving gift for Peter Dawson, the departing CEO of the Royal & Ancient (R&A, golf's ruling body). So long as I stuck to one task at a time, I found the making a challenge, but fun. Getting going is the worst consequence

of my brain injury, perhaps because decision-making, prioritising and multi-tasking are considered executive actions. Once the single step of design was resolved, and the production methods decided, the journey of 1,000 miles went swimmingly and the piece was finished not just on time, but a few days early. This proved to be fortunate when the package was sent to St Andrews, but with our Wiltshire postcode on the label. So it dropped into a courier's vortex, and a replacement had to be made over a weekend and dispatched, and both ultimately arrived within hours of each other, a day before the leaving do.

It is great to be writing again for *Good Woodworking*, 23 years after I launched it and 10 years since I returned to edit it again, now finding old friends Phil Davy and Andy King still in the fold. Hopefully this will help me discover renewed enthusiasm for the shed, and I'll be writing some more. **GW**



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Plana 3.1c shown with optional slot mortising attachment



Plana 6.1c shown in planing mode (with optional mortising attachment)



Plana 6.1c shown in thicknessing mode



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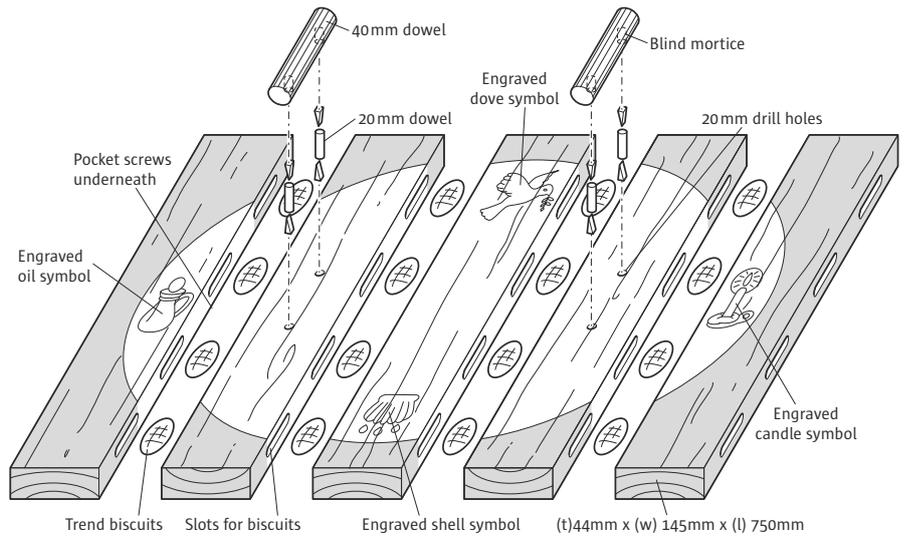
FONT OF ALL KNOWLEDGE

Tirbhavan 'Tibby' Singh Chodha takes us through the steps for making an unusual and completely unique commission



▲ Pic.1 The baptismal font at St Bartholomew's Church, Leeds

Fig.1 Exploded view of the font cover



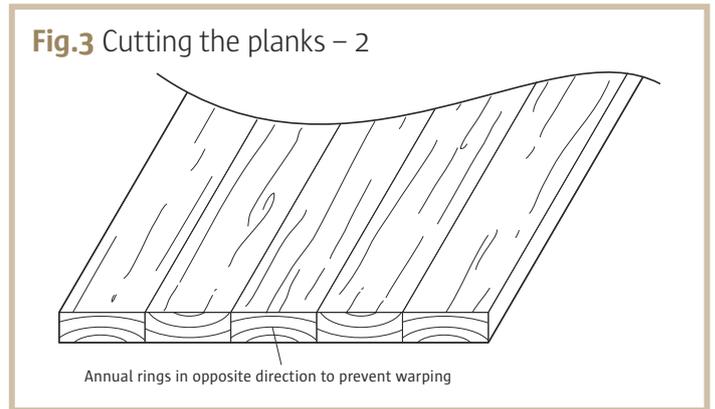
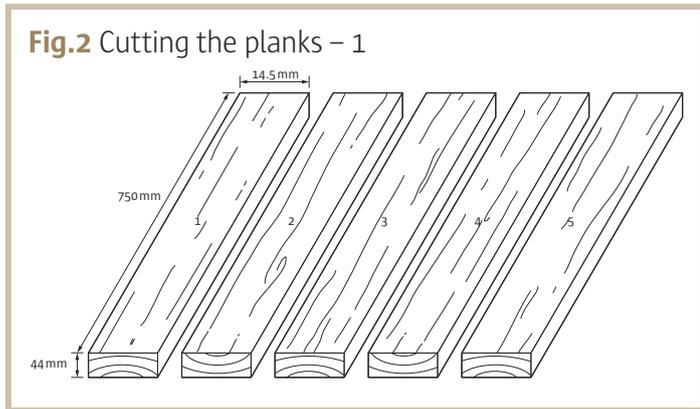
▲ Pic.2 Cutting the various lengths of timber to the correct size



▲ Pic.3 Once cut, the planks are laid out and the grain matched as best as possible

St Bartholomew's Church in Leeds is best known for its famous organ, which has been awarded a Grade II listing by the British Institute of Organ Studies. However, since being completed in 1872, St Bartholomew's has never had a cover for the baptismal font. As a result, I was recently approached by the Father, who wanted to commission the project of a font cover for the church, as a leaving gift from him.

After meeting the Father at the church, I was particularly moved by the whole story and in awe of the church and its fascinating history. As a practising Sikh, we are encouraged to perform 'Seva', which translates as 'selfless service' or voluntary work. This is to help the community by performing unpaid work in hospitals, old peoples' homes, community centres, etc. As I was so touched by what I was asked to do, I came to the conclusion that I wanted to complete this whole project,



▲ Pic.4 Marking out the centre point on the timber, using the Trend flat lying trammel set to 350mm for the radius

▲ Pic.5 With the circle drawn, the various locations for the engravings are marked out



▲ Pic.6 Here you can see all of the symbols drawn on

▲ Pic.7 Using the Trend T10 router to cut slots for the biscuits



▲ Pic.8 Once the slots were cut, the biscuits could be inserted

▲ Pic.9 Screwing the boards together, to provide added strength

▲ Pic.10 Trend's Mini Pocket Hole jig was used to provide a strong edge-to-edge joint on the underside of the cover

Fig.4 Drawing the circle – 1

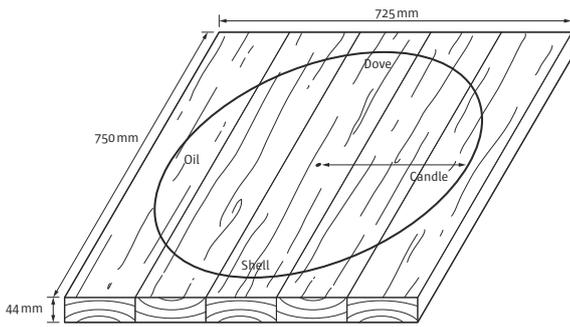


Fig.5 Drawing the circle – 2

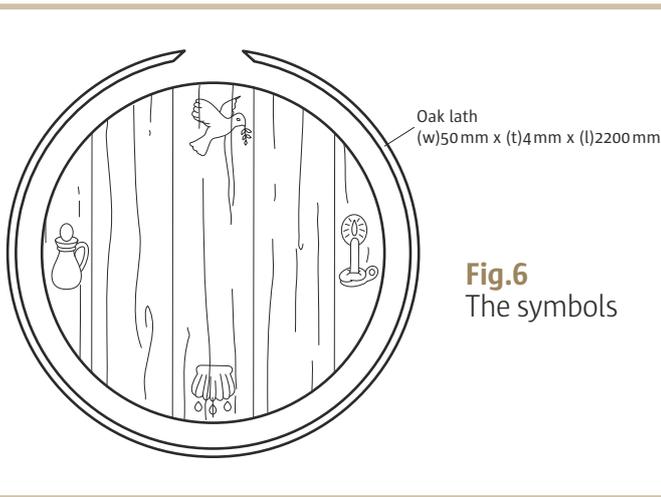
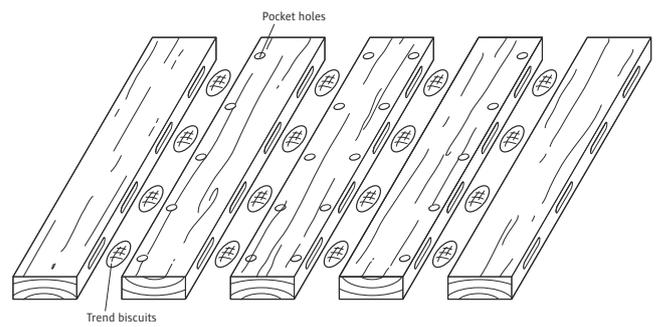


Fig.6
The symbols



▲ Pic.11 Clamping and screwing everything together to ensure an even pressure



▲ Pic.12 To hide the visible pocket holes and screws on the underside of the cover, I used a pocket hole plug cutter to cut some plugs

Choosing materials

Firstly, I was quick to decide on what material I was going to use, which in this case was American white oak, partly for its strength and resistance to decay.

Secondly, I carefully calculated what size I needed to make the cover in order for it to have a good overhang on the font, which would prevent it from falling in. In this case, the diameter worked out to be 700mm (Pic.1).

The material I was going to be using was 145mm wide × 44mm deep and available in

various lengths. After further calculations, I worked out that I would need five lengths of the material in order to cover the full diameter, i.e. 700mm (the diameter of font required) divided by 145mm (the width of material used) = 4.8. This figure therefore needed to be rounded up to five lengths of material. The lengths were cut to 750mm long, which would leave me with more than enough extra and would also help in the manufacturing process (Pic.2).

Once cut to size, I laid out the planks and tried to match the grains as best I could (Pic.3). This will help give the illusion that the cover

designing and developing the font cover, voluntarily.

Trend Routing Technology were also extremely enthusiastic to help and support me with the project and also arranged to capture the work on video, knowing that the font cover will potentially and hopefully be there for many hundreds of years. I always want to create something truly special, so as part of the preparation and design work, I spoke to the client, the Father, throughout the project and also did a lot of online research to make sure that I had everything just right.

In this article I have written a step-by-step guide to making the font cover. However, the same process can be used to make other projects, such as a solid oak circle table top.



▲ Pic.13 Trend's Loc Block workpiece supports help ensure that everything is firmly held in place



▲ Pic.14 Routing the perfect circle using Trend's ellipse and circle cutting jig



▲ Pic.15 The engraved oak lath being secured in place



▲ Pic.16 Securing the lath in place using a band clamp



▲ Pic.17 I needed to use a large number and variety of clamps to make sure the lath would be correctly glued into position



▲ Pic.18 Creating a high quality finish on the lath using Trend's multifunctional CRB combination router base

was made of one piece of timber. When you are matching the grains, it is also important to pay attention to the annual rings that will be seen on the depth of the boards. This is because alternating the direction of these rings will prevent the final piece from warping in one direction.

Creating the circle

I then marked the centre point of my circle on the timber, (Pic.4) set Trend's flat lying

trammel to 350mm for the radius and then accurately drew the circle. I usually would have glued all of the pieces of timber together before marking the circle; however, in this case, I wanted to engrave a few symbols on the top of the cover, (Pic.5), so the timbers needed to fit inside the machine. The symbols I selected that relate to baptism included a dove, candle, shell and oil. I marked their locations on the timbers (Pic.6) before engraving them using Trend's CNC mini engraving machine.

There are several methods of joining the boards together, but on this occasion I chose the biscuit jointing method. I used Trend's T10 router with their bearing-guided biscuit jointer to cut out a series of slots for the biscuits (Pic.7). I routed several slots to provide more strength. When routing out the slots, run the router on the same side of all the boards; this will ensure the boards align correctly.

In addition to this jointing method, I wanted to screw the boards together to make it even



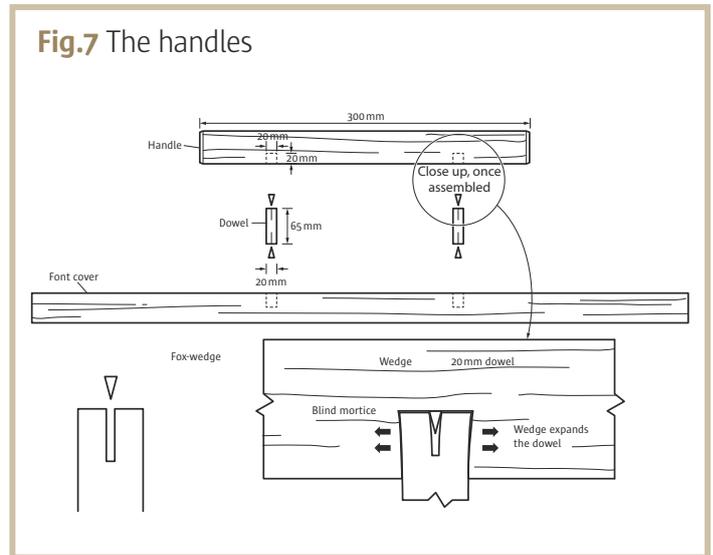
▲ Pic.19 The handles were placed into the Trend CNC machine for engraving



▲ Pic.20 The oak dowels showing the two engraved symbols



▲ Pic.21 Holes were drilled in the font cover and bottom of the handles using a 20mm auger bit



stronger (Pic.9). However, I wanted to do this in such a way that none of the screws would be visible, so I used Trend's Mini Pocket Hole Jig on the underside of the cover. It's another fast and accurate method that instantly provides a strong edge-to-edge joint (Pic.10).

Clamping up

Next I was ready to glue, clamp and screw everything together. I applied Cascamite glue on all edges as well as applying it onto the biscuits. I always ensure to apply plenty of pressure, to keep everything together and left the workpiece to dry for 24 hours to ensure the glue had completely set (Pic.11). It is advisable to apply the clamps on alternating sides, so as to evenly distribute the pressure across both sides. This prevents any unbalance of pressure and the potential of the boards from warping.

As the pocket holes and screws were still visible on the underside of the cover, I wanted to hide them. I used Trend's pocket hole plug cutter to cut some plugs and glued them into the holes (Pic.12). Once dried, these can be chiselled off, but I used Trend's folding flush saw, which helps to minimise the risk of damage to the surface of the workpiece.

Once the glue had dried, I used a Festool ETS EC 150/5 sander to get a smooth surface on both sides, so I could start to cut the round

circle out with a router. To stop the cover from sliding around when being sanded, I used Trend's Loc Block workpiece supports, (Pic.13), which ensure everything is held firmly in place.

The oak lath

I then used a router fitted with Trend's ellipse and circle cutting jig to cut the cover into a perfect circle (Pic.14). I fixed the jig to the underside of the workpiece to prevent any visible holes on the finished side, although any screw holes would still be plugged.

I decided to wrap an oak lath around the edge of the font cover to hide the end-grain but also wanted to engrave a hymn around the front edge that read, "As my Father sent me, so do I send you." (Pic.15). Again, this was completed using Trend's CNC machine. The lath I chose was 50mm wide, which was sufficient to cover the 44mm depth of the cover. With a thickness of 4mm, the lath was relatively thick but provided sufficient depth to be engraved on and also reduced the chances of it snapping. Using another trigonometry calculation ($\text{circumference} = \pi \times \text{diameter}$), I worked out that the minimum length of the lath would need to be 2,200mm.

I then cut the appropriate mitre to ensure it finished nicely where the two edges of the lath meet and glued it into position using Cascamite



▲ Pic.22 Clamping the handles into position



▲ Pic.23 Giving the font cover a final sand



▲ Pic.24 The wine bottle holder with 3D crucifix really finishes the whole project off



▲ Pic.25 The completed font cover, showing the glow in the dark engravings, and also showing how it looks when the lights are on



▲ Pic.26 I engraved my name and date into the font cover, so over the generations, people will know I made the project

glue. As it was a thick lath, it wasn't very flexible so I had to use a large number and variety of clamps, one of which included a band clamp, which was ideal for this job (Pics.16 & 17).

As previously mentioned, the lath was thicker than the depth of the cover. This lipping at the top and bottom allows you to get a high-quality finish by either planing or routing it. There are a number of ways of doing this and for this task, I used Trend's multifunctional CRB combination router base (Pic.18). It has an offset base, which gives you more control when edge routing.

The handles

The next step in the process was to create handles to assist in removing the cover from the font. After carefully taking a number of factors into consideration, such as the size and weight

of the cover, I cut two 40mm oak dowels, which were 300mm in length. Again, in keeping with the theme, I engraved the symbols of Alpha on the left-hand side and Omega on the right-hand side, to signify the 'beginning of life' and the 'end of life'. The bed of Trend's CNC machine has grooves that allow round objects such as these handles to sit in them and be clamped into position (Pics.19 & 20).

I used 20mm oak dowels to fix the handles to the cover so used a 20mm auger bit to drill two holes into both the top of the cover and the bottom of the handles (Pic.21).

I cut four of these dowels to 65mm in length with 20mm going into the cover and another 20mm going into the handles. This left a gap of 25mm between the cover and handles, sufficient to comfortably grab them.

I used the foxtail wedging method with Cascamite glue to fix the handles to the cover. This was done by cutting 15mm slots into both end-grains of the 20mm-thick dowels. Small wedges were then placed into these slots, which spread the tenon in the blind mortise & tenon when the dowels were forced into the holes. This expansion results in a tight fit. It is important to get the wedges the correct size because if they are too thin, they will not have an expansion effect. Similarly, if they are too thick, the two objects being fixed together will not mate as they should. If you think you may find this a bit tricky, you could always try it on an offcut of material before you commit to the final project. I then used Piher's long reach jaw clamps to clamp the handles into position (Pic.22).

Glow in the dark

I decided to combine a traditional approach with a contemporary finish by incorporating a glow in the dark material into the engravings. I gave the font cover another sand, this time using the Festool ETS EC 150/3 sander and applied a stain to finish it off (Pic.23).

Finally, I also made a wine bottle holder with a 3D crucifix at the base as a finishing touch to the project (Pic.24). Once everything was finished, it was time to turn the lights off to reveal the glow in the dark element, which looks really effective (Pic.25).

One of the reasons why I love my job is the fact I can create anything imaginable and people will go on to use my creation. In this case, it happened to be a baptismal font cover for a church, which will be used in many baptism ceremonies over many years. Therefore it was a proud moment and feeling for me to be able to sign off this piece of work, by engraving my name and the date of donation to the church on the underside of the project (Pic.26). ☒

Tirbhavan 'Tibby' Singh Chodha

You can find out more about Tibby and see more examples of his work by visiting his Facebook page: www.Facebook.com/Tibby.Singh. To see the font cover being made in real time, in association with Trend, visit YouTube: <https://www.youtube.com/watch?v=nNIN1LWmp40>



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Choosing wood for furniture making

In the next part of this series, **John Bullar** discusses the subject of choosing wood for your furniture making projects

Wood can be beautiful stuff. If every piece of wood you use looks great there is a good chance that, when put together, your finished furniture will look great too. But as well as appearances, the wood also needs to work well and to last. So there is a lot to think about

when you choose wood for a furniture project.

Furniture makers mostly start with their wood ready converted into boards and dried. I think it is helpful to look into the background of where this wood comes from, how it is converted from tree trunks and what the maker's buying options are.

Buying choices

The easiest way to buy wood is ready sawn and planed from a hardware supermarket. Wood like this can be good for small construction jobs but it is not usually interesting nor is it ideal for fine furniture making. For more variety and better quality you can go to one of the large

wood suppliers who will stock a range of kiln-dried boards in hardwoods. Some woods may be native but many are imported from around the world. The supplier will plane boards and saw them to length for a charge.

If you want to be a little more adventurous, there are small specialist wood conversion companies dotted around the country. As well as buying wood from forests they fell local trees for land owners or councils and turn them into fine native timbers.

What sort of wood?

There are hundreds of different types of wood available from local suppliers. These can be divided into two main groups: softwoods and hardwoods. You might expect softwoods to be softer and hardwoods harder but this is not always true. For example, yew is a softwood but exhausting work to saw – it is one of the few woods considered strong enough to make longbows since Robin Hood was a lad! On the other hand, balsa is a hardwood, but children can cut it with a craft knife to make models. The strict definition is that softwoods come from trees with needles while hardwoods come from broad-leaved trees.

Softwoods

Softwood trees are efficient mass producers of wood with tall, straight trunks and small branches well suited to dense forests. All but the roots and very top of the trunk are used for timber (**Pic.1**).

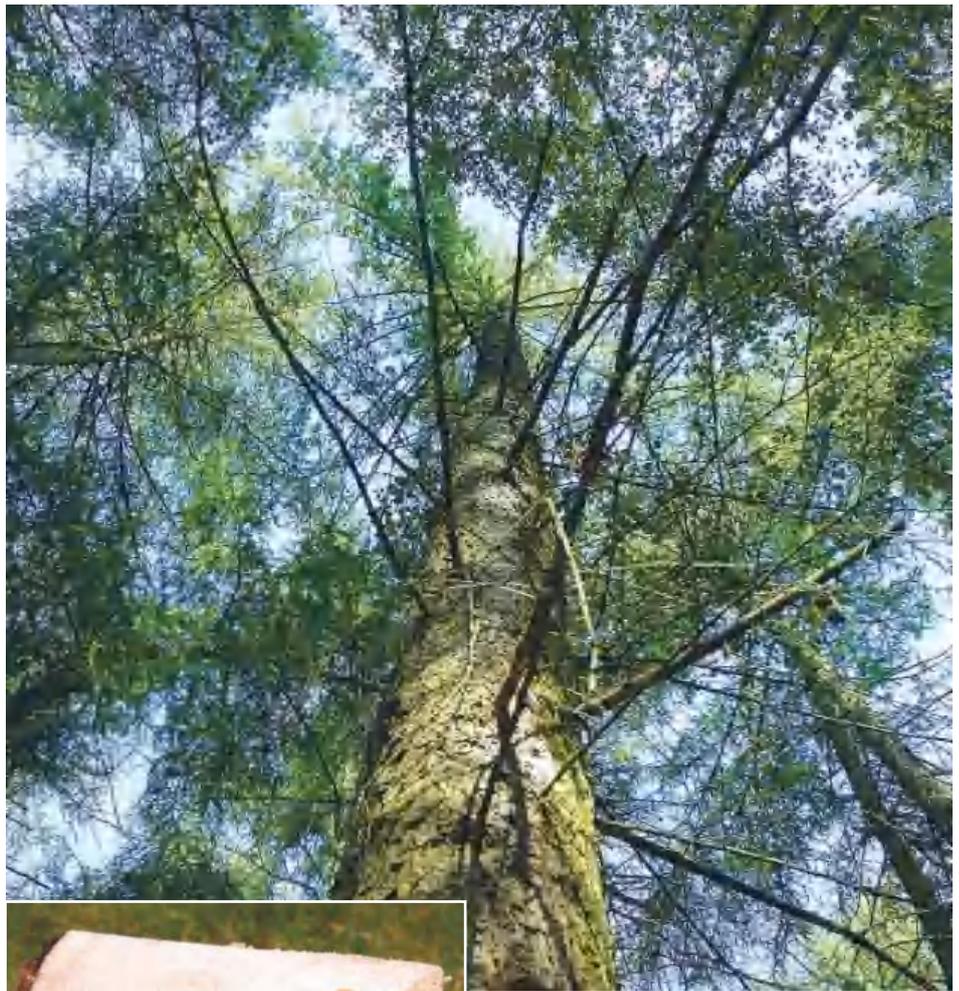
The mass of small branches on a softwood tree produces a lot of knots. Many of these are dead knots from lower branches that died in the dark of the forest floor. These knots are awkward to plane and finish, making the timber uneven (**Pic.2**). Softwoods tend to crush while you cut them, making accurate work more difficult.

Hardwoods

Hardwood trees grown in open spaces produce a stout main trunk, which can be converted into good timber for the furniture maker. Higher up, the tree divides into curved branches, which have no use for conventional furniture making (**Pic.3**).

Commercial forests for hardwood timber are grown close together. This means the branches are high up where the light can reach the leaves and the main trunks are long. Tall, straight trunks produce long, straight boards, which therefore makes the wood more valuable and desirable (**Pic.4**).

Hardwoods have more complex fibres than softwoods making the grain patterns more interesting. As well as the main fibres running from top to bottom, there are the ray-fibres running between the centre and outside of the trunk (**Pic.5**). Each hardwood has its own patterns of rays. These are more visible in oak than other species, especially when it is 'quartersawn' – that is, cut on a line that passes close to the centre.



▲ Pic.1 Softwood trees with tall, straight trunks and small branches are efficient mass producers of wood



▲ Pic.2 A softwood tree produces a lot of knots from the mass of small branches

From tree to board

After felling the tree the timber convertor slices the trunk into boards. This may be done in a large factory timber mill, or using a mobile horizontal bandsaw mill. Using a mobile unit, the convertors can tackle large logs without heavy lifting and transport equipment (**Pic.6**).

Once the log has been sliced, the boards are kept in sequence both for ease of stacking and also because boards kept together from the same tree are more valuable (**Pic.7**).

Distorted wood

You can imagine the main fibres of wood to be like a bunch of straws. Water easily gets into the ends of the fibres and works its way along them, swelling them up as it goes. The fibres

become fatter when they are wet but there is very little change to the length.

When wood dries it becomes thinner and narrower. This shrinking effect is stronger towards the outside of the tree trunk, causing the annual growth rings to straighten and previously flat wood to distort in shape. One of the furniture maker's key skills is to cope with these changes, which are known as 'wood movement'.

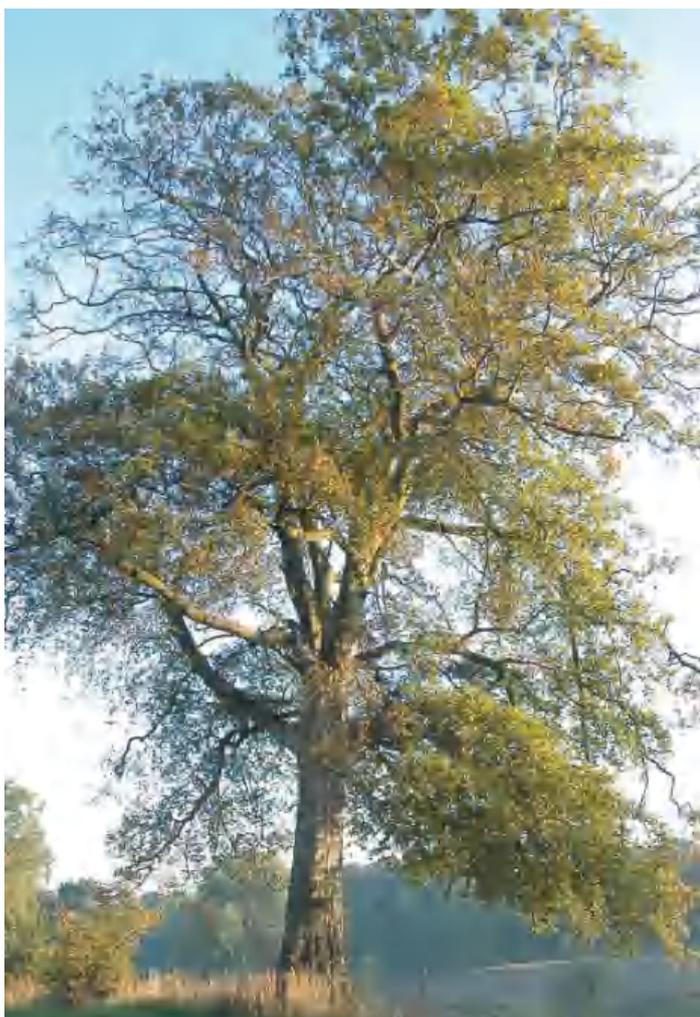
Moisture levels

Trees carry water up their trunks to the leaves, so when a tree is felled there is a huge amount of water trapped in the wood. Often the water weighs more than the wood itself. When the wood and water weigh the same we say 'the moisture content is 100%'. For making stable indoor furniture we want the moisture content to be reduced to about 10-12%.

A moisture meter will read the percentage of water left in the wood. Basic meters insert pins into the wood to measure its electrical resistance. Suppliers may be unhappy with you using this type on boards before you buy them as they leave little holes.

The better types of moisture meters can measure the level deep inside the wood without marking it, simply by placing the meter against the surface. (**Pic.10**).

Start furniture making



▲ Pic.3 Hardwood trees grown in open spaces produce a stout main trunk, which can be converted into good timber



▲ Pic.4 Hardwood trees like these oaks are grown close together so the branches are high up and the main trunks are tall



▲ Pic.5 This oak log has been cut into quarters so you can see the rays running between the centre and outside of the trunk as well as the fibres running from top to bottom

Dried wood

Traditionally, wood was air-dried after cutting by letting the wind blow through the boards. Wood intended for outdoor use will often still be dried in that way (Pic.9).

For indoor furniture the wood is normally either air-dried in a ventilated drying shed (Pic.10) or else dried at raised temperature in a 'kiln'. The wood kiln is warmed with blown air circulating to dry out the wood. Sometimes there is also a dehumidifier built in. Strips of wood or plastic are laid between the boards to

separate them and allow air to pass through the gaps, carrying moisture away. (Pic.11).

After drying, the boards can be separated out from the stack but still kept in the order they were cut. At this stage the boards will have rough edges showing the outline of the tree, possibly with bark and they are known as 'waney-edged' boards. (Pic.12).

Choosing boards

After it has been dried the wood may be stacked up high. Choosing the timber you want

often involves being able to assess boards from their ends and edges. You might need to persuade the supplier to move stacks around so you can check the quality. The colour of un-planed boards can be very deceptive so ask to see a small piece planed before buying a large quantity.

Once you have found the right material of the right quality you will need to measure the boards, taking note of any defects or unusable pieces. Choosing timber for a specific project calls for thinking on your feet (Pic.13).



▲ Pic.6 The main trunk is sliced into boards on a horizontal bandsaw mill



▲ Pic.7 When the log has been sliced the boards are kept in sequence



▲ Pic.8 A moisture meter reads the percentage of water left in the wood



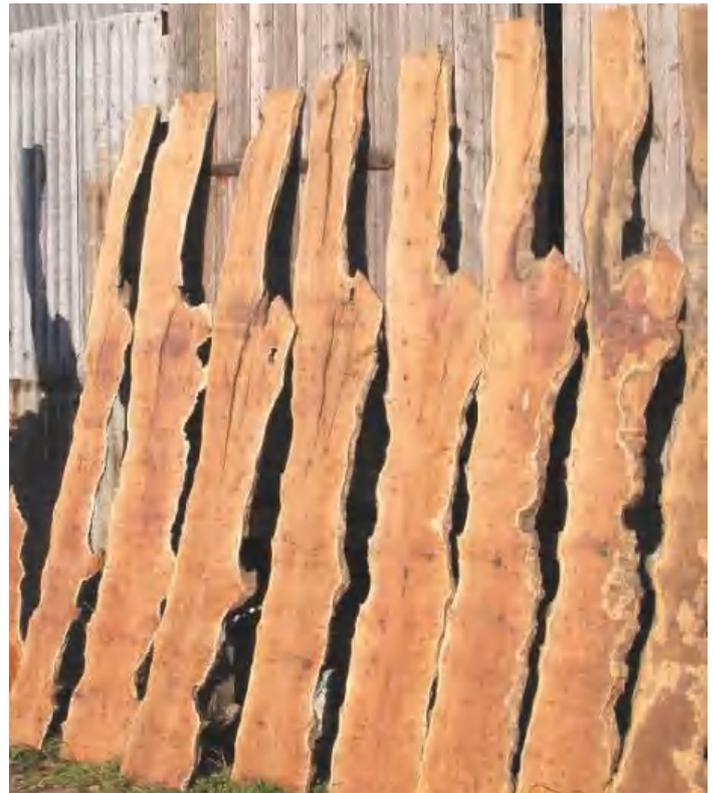
▲ Pic.9 Traditionally, wood was air-dried outdoors, letting the wind blow through the boards



▲ Pic.10 After drying, the wood is stacked up in a well-ventilated shed



▲ Pic.11 Inside a drying shed or kiln, strips of wood or plastic are laid between the boards to separate them



► Pic.12 Sawn boards will have wavy edges showing the outline of the tree

Environmental credentials

Before you put a lot of effort into making a special piece of furniture you might want to be sure the wood you use was responsibly grown and cut down without harm to the forest. The best way to be sure is to buy certified wood.

The Forest Stewardship Council (FSC) is an independent worldwide organisation that protects forests for the future; it provides a scheme to certify wood. After it has passed through distributors and suppliers, the end user of FSC certified wood can be confident it has been responsibly harvested. Most large suppliers sell FSC certified wood. Some small local wood convertors sell FSC wood too, while others will be able to explain their own way of ensuring the wood is responsibly felled.

Popular furniture woods

Oak (**Pic.14**) is a plentiful hardwood renowned for its strength and lasting quality. It is sold mostly in two categories: European oak and American white oak. European (sometimes specified as English, French, etc.) has more character and colour, which ranges from pale biscuit to deep rich brown.

The outer 50mm or so is called sapwood; this is pale in colour and prone to rotting and woodworm when damp, so furniture makers

often remove sapwood and use only the darker heartwood. It saws well and has a strong uniform grain, making it ideal for cutting joints and for use in tables and heavy-duty furniture.

Ash (**Pic.15**) is a light, strong hardwood with straight grain patterns and an attractive pinkish grey colour, sometimes with dark streaks when described as olive-ash. It is good to work into furniture frames and chair legs but discolours easily and must be protected from damp.

Elm (**Pic.16**) is an attractive strong hardwood that comes in many varieties. There are far less elms growing because of the damage by beetle spread diseases but some elm is still obtainable in big wide boards, which is ideal for seats.

Walnut (**Pic.17**) is the most beautiful of native hardwoods. The grain patterning is highly variable typically with rich streaks of warm browns, blacks and greys. American walnut is less variable and more purplish brown in colour. Walnut is fine-grained, crisp and delightful to work in fine detailed furniture. Other fruitwoods, such as cherry, are paler and also good to work but none compare to walnut.



▲ Pic.13 Once you have found the right material of the right quality, you need to measure out the boards

Start furniture making



▲ Pic.14 Oak is a favourite for furniture makers because of its warm colour, easy working and strength



▲ Pic.15 Ash is similar in working properties to oak but less durable and paler in colour



▲ Pic.16 Elm varies greatly but is good for large scale work, has a warm colour and striking grain patterns



▲ Pic.17 Walnut is a beautiful timber with rich colour streaks and a crisp grain, excellent for fine shaping



▲ Pic.18 Plywood has grain in both directions, making large panels less liable to distortion



▲ Pic.19 With patience you can convert a small log yourself to make an item such as a little box, stool or breadboard

Pine is a basic softwood, light in weight with a warm yellow colour. It is prone to loose knots and resin pockets, but useful for lightweight internals and furniture back panels. There are many varieties of pine as well as other softwoods wrongly labelled as pine.

Manufactured wood products

Some people prefer to make furniture exclusively from solid wood. However, manufactured boards can solve a lot of problems with seasonal stability, especially if the furniture is positioned near a radiator, for example. Many ways have been developed to convert wood into a more stable, consistent material.

Medium density fibreboard or MDF is used a lot for hidden panels or with veneered surfaces. Chipboard is made from coarser wood fibres and less densely packed so it tends to have voids, which weaken it.

Plywood is built up from thin layers of wood

running alternately long ways and crossways within the board. Because ply has grain running in both directions it is less liable to distort with changes in air moisture. Plywood is good for use in large furniture panels where the edges are hidden. (Pic.18).

Other engineered materials such as blockboards are relatively stable and easy to obtain while retaining some of the beauty of solid wood.

Storing wood

Having bought the wood it is essential to store it somewhere flat for a few weeks to make sure it is stable and will not distort when turned into furniture. It must be laid on a flat surface or across rafters rather than, say, leaned against a wall, otherwise the boards will develop a banana shape.

Starting from scratch

Sometimes you may find a piece of wood you want to convert yourself to make a small item,

such as a jewellery box or breadboard. There are furniture makers who convert their own wood and although it involves a lot of work and equipment, it can be successful. Even so, I would not recommend tackling this on any scale until you have considerable experience. Experimenting with small pieces, however, can be interesting and informative (Pic.19).

Conclusion

Carefully made furniture can be spoiled by unexpected wood movement as it adapts to a change of humidity or temperature, so whatever wood you choose, make sure it is dry and stable before starting work on it. [GW](#)

NEXT TIME

In issue 304, John will look at how furniture makers choose and use planes for flattening surfaces and straightening the edges of wood



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Collecting cabinets

Offer places to store, keep, and organise those objects and things that are dear to our lives

“These pieces, shortlisted for the 2015 Wood Awards, collectively entitled ‘From Greenwich to The Barrier’ and ‘Perpetually Ajar’ are a pair of unmatched collecting cabinets: one with a multitude of drawers, a fall flap and vertical tambour; the other with a cedar-lined cupboard, small drawers and a fall flap. David Gates says that as with much of his cabinetwork, visual and structural inspiration is drawn from the expediency of industrial architecture. The solidity of oak is supported on visually light maple leg frames. Maple also provides for

bright white drawer interiors and cedar is used to remind us that we encounter furniture with all of our senses.

These pieces relate to various structures encountered on walks along the Thames Estuary and the footpaths through the remaining riverside industrial zones of South East London. They offer places to store, keep, and organise those objects and things that are dear to our lives and without which the furniture would be incomplete. The pieces measure 1,150mm and 1,170mm high. ”

'From Greenwich to The Barrier' & 'Perpetually Ajar'

© David Gates

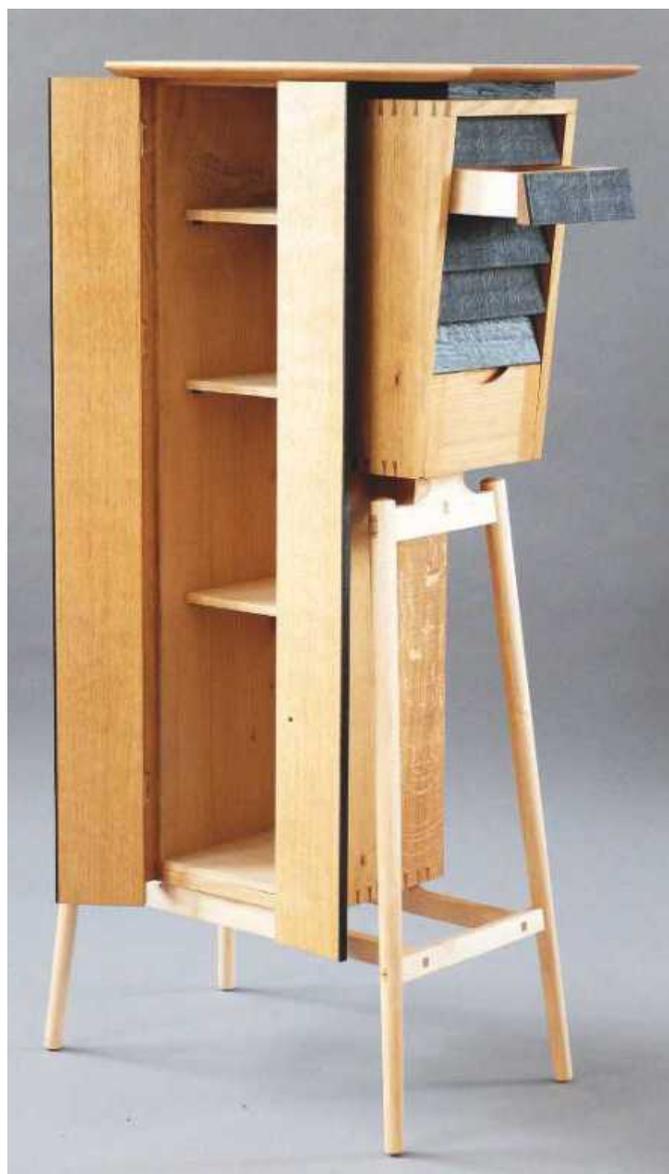
Fact file

Designer: David Gates

Wood supplier: Blumsoms, WL West, North Heigham Sawmills, Timberline Tonbridge

Wood species: Quartersawn European oak, brown oak, bog oak, American maple, cedar of Lebanon, Douglas fir

To find out more about David and his work, see www.davidgatesstudioworkshop.co.uk



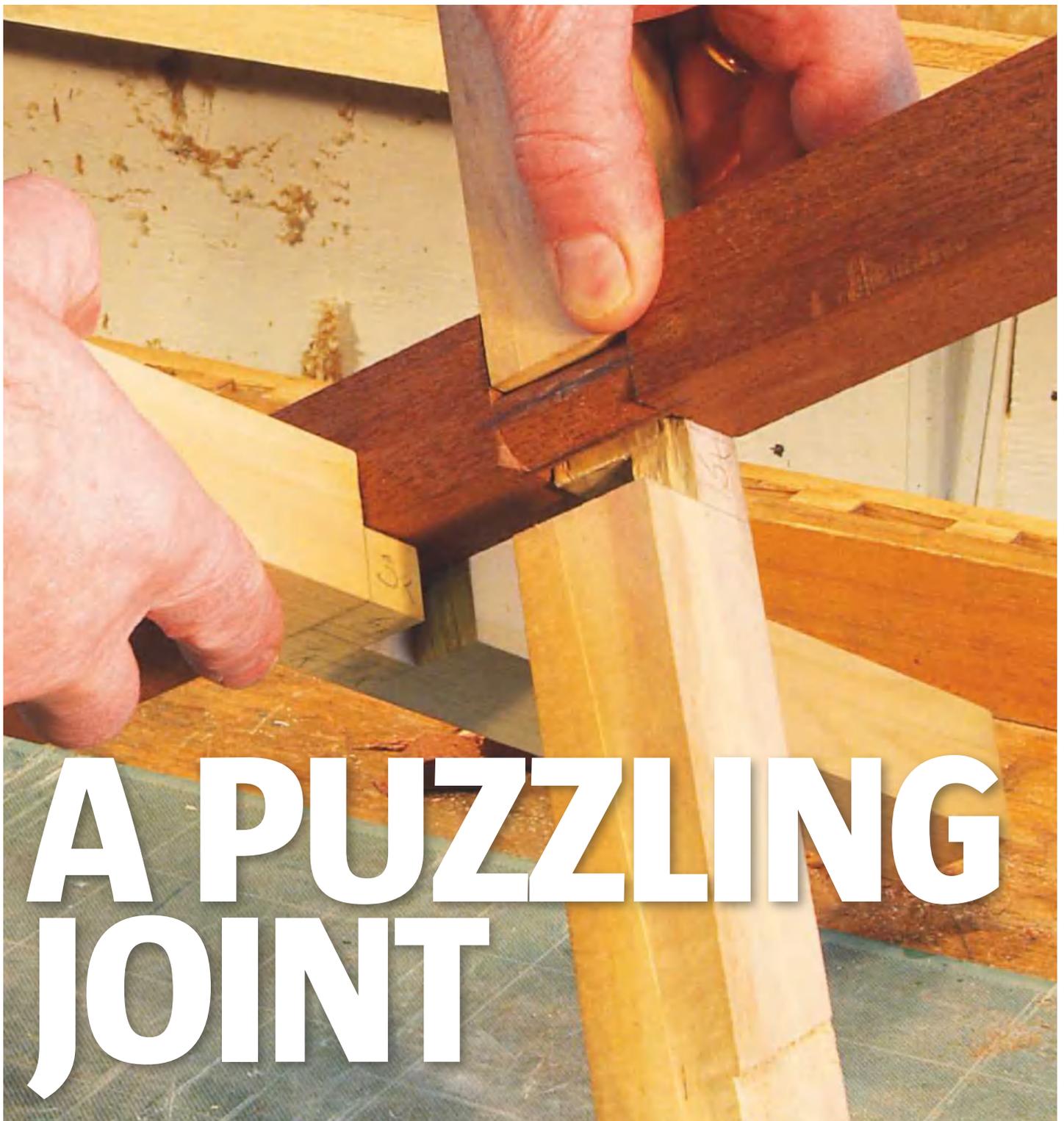
This cabinet features a cedar-lined cupboard, small drawers and a fall flap



This cabinet features a multitude of drawers, a fall flap and vertical tambour

David Gates

David Gates designs and makes furniture from his studio and workshop in South London. He makes speculative pieces for gallery shows, designs and makes bespoke works to commission, and works on public art commissions. Much of David's cabinetwork is explicitly three-dimensional: many pieces appear to have more than one front elevation, an invitation to spend time exploring the cabinet's form – to look around it. As we do this, its small secrets are revealed, internal spaces are concealed by a range of openings – fall flaps, hinged doors and sliding tambours, as well as drawers. Their asymmetrical compositions have a relationship with the geometry of industrial architecture; despite being highly functional, their function is not immediately apparent



A PUZZLING JOINT

Joints such as this Japanese puzzle variety make for fascinating cutting exercises, says **Michael Huntley**

One of the problems facing Japanese (and Chinese) carpenters was the fact that their hardwood timbers resisted glue because they were slightly oily and the changes in climate meant that high humidity would soften animal and protein glues. The result was the development of, and reliance on, mechanical joints for buildings and furniture. The cutting of precise complex wooden joints meant that tall structures including pagodas and long span structures, such as the Kintai bridge, could be constructed. This acceptance of complex joinery also fed into the craft of furniture making,

although of course, not a lot of furniture was made due to the use of built-in cupboards. There was, though, a need for possessions to be picked up and carried out of the house in the event of fire, and chests were made that could be easily lifted and moved to safety.

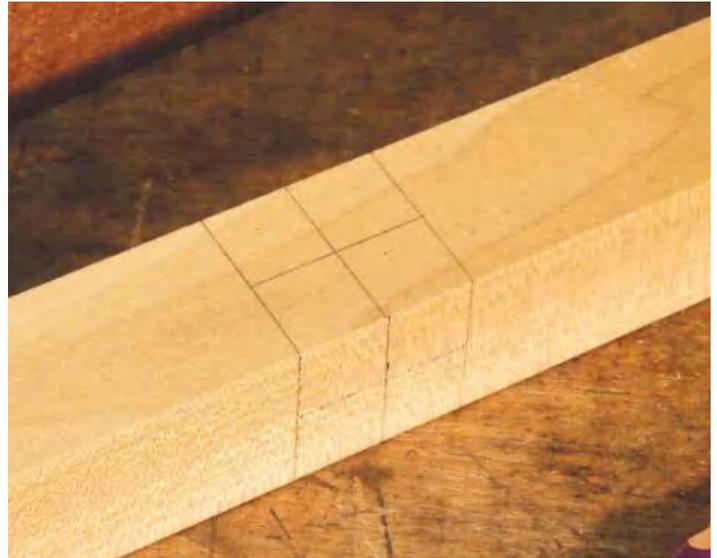
Chidori furniture

I am going to look at a 'simple' Japanese joint this month, one that is a puzzle joint but which has been used in shelf and indeed building construction. For more information about the use of Chidori joints just Google 'Kengo Kuma Chidori'. Kengo Kuma is a Japanese architect

The Japanese woodworking tradition: part 2



▲ Pic.1 Three easily identified identical cross-section scrap timbers



▲ Pic.2 Mark the first piece for a half-lap divided into equal squares



▲ Pic.3 Number the face of each square and put a 'K' for keep



▲ Pic.4 Four faces with four squares gives 16 individual squares



▲ Pic.5 Note that the cuts do not go into squares 9 and 10



▲ Pic.6 Carefully chop out the squares that you are not keeping

who is promoting the use of traditional crafts. I was introduced to him by one of my students who wanted to know how to make these joints. Apart from the 'puzzle' aspect these are a good opportunity to practise precise cutting.

First piece

Start by preparing three pieces of timber to the same cross-section. For ease in understanding which bit goes where, I have used three different coloured timbers and I suggest that you do the same on your first attempt.

Take one piece of timber and set the rest aside. Mark this out for a half-lap joint but

continue the markings all round the timber, then divide the marks into equal squares as shown in **Pic.2**. It is vital that everything is equal, square and precise. I have used a pencil in the photos for clarity but I would normally use a knife and gauge.

It is a good idea to number the face of each square, then mark squares 3, 5, 7, 8, 9 and 10 with a letter 'K' for 'keep'. By now you should begin to see the pattern. The idea is to cut out all the squares that do not have a 'K' on them (**Pic.3**). You will need to turn the timber to cut out the edges of squares 13, 14, 15 and 16 (**Pic.4**). **Pic.5** shows that the cuts against

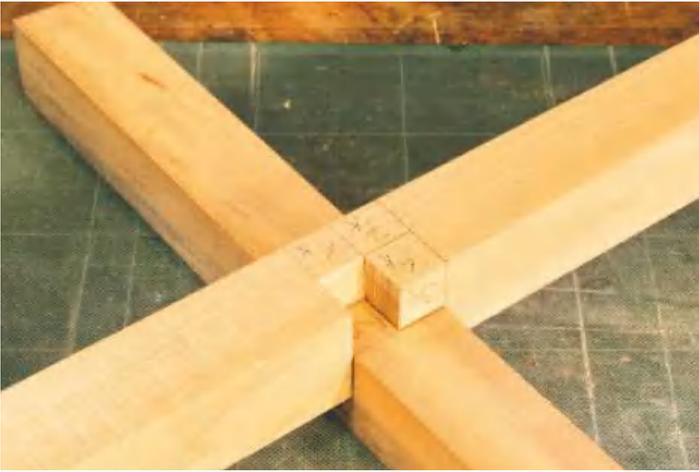
squares 11 and 12 do not penetrate into squares 9K and 10K. Next, chop out the squares that do not have a 'K' on them (**Pic.6**).

Second piece

Mark up the second piece of timber in exactly the same way as the first and insert it into the 'half-lap' (**Pic.7**). The numbers are upside down in the photo because that was the only angle that showed all the detail. Note that the number 9 has an underscore beneath it to differentiate it from a number 6.

By observation, you need to keep 1, 2, 4, 6, 15 and 16 on the second piece. Create a void

Japanese joinery



▲ Pic.7 The two timbers beginning to go together



▲ Pic.8 Starting to make the cuts that will create the voids



▲ Pic.9 Pieces 1 and 2 now interlocking BUT only halfway through



▲ Pic.10 After removal of the next group of squares, they fully interlock and leave an aligned void on each piece. I have pushed a pencil through these voids to show where they are



▲ Pic.11 The third stick marked with chalk



▲ Pic.12 Sawing the third stick down to the chalked squares

where 9, 7, 5, and 3 are; they need to be removed. Saw down the edges of the squares, taking care not to saw into ones that you want to keep, (Pic.8) and then chisel out. You can now fit them together again (Pic.9). They will half interlock so you need to check which ones you need to remove to arrive at the 'half-lap' fully interlocking. In this case it is squares 8, 10, 11, 12, 13 and 14. It is very easy to assemble them upside down or to number

them differently, in which case the joint may not fit. Once you have done a couple of practice ones, however, it will all become obvious.

Once the squares are removed, you will have a half-lap cross joint with a void in the middle (Pic.10).

Third piece

Now take the last stick and mark it out centrally as before. As I am using a dark timber, I have

knifed the lines and pencilled them in. The little Shinwa square is very easy to hold when you are knifing lines. This time I have marked the squares that need to be kept in chalk. You can see the stick resting against the cross made from the other two sticks in Pic.11. The chalked squares will remain and will fit into the square void, which you can just see behind.

Saw down to the lines on the outside of the chalked squares (Pic.12) and chop out (Pic.13).

The Japanese woodworking tradition: part 2



▲ Pic.13 The waste chopped out leaving the chalked squares



▲ Pic.14 Whittling a cylinder that fits tightly within the square void



▲ Pic.15 The second piece slides along the third piece into position



▲ Pic.16 First and second pieces now interlocking...

The lines on the last dark mahogany stick will help you to whittle it or file it into a cylinder that will just fit inside the square void (Pic.14). That is the secret; it is whittled to a round cylinder that just fits into a square hole.

Put the first and third pieces together as shown in Pic.15, then slide the second piece into position and finally rotate the third piece (Pic.16). It does go together, honestly! See Pic.17. If in doubt, work out which numbered cubes go where.

Conclusion

Now this joint may not be exclusively Japanese as there are many 'puzzle' joints in woodworking. Whether you use them or not, joints like these are fascinating cutting exercises because if you make four of these by hand using 12 sticks and try to join them together as an exoskeleton shelf unit, you will discover whether your joint cutting is accurate or not! I had to have three goes until I got the hang of it, and I thank a couple of my students who researched and developed it. 

NEXT MONTH

In the next and final Japanese joinery article, Michael will be talking about the joint used to secure table top frames together in low Oriental tables

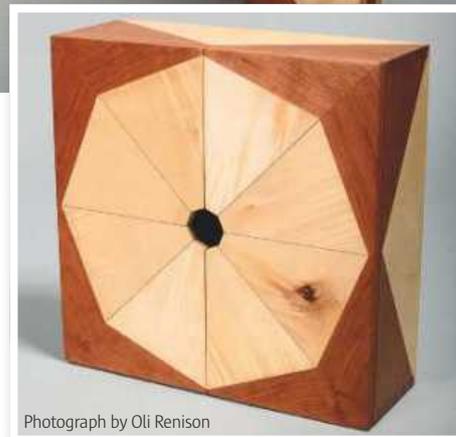


▲ Pic.17 ... the third piece is then rotated into position

Photographs by Philipp Stummer, unless otherwise stated
Photograph by Oli Renison



Cabinet of curiosities



Photograph by Oli Renison

Warwickshire College student **Philipp Stummer**'s stunning wall cabinet holds endless possibilities, as he shows us here

This project was an interesting learning curve for me as there were many new things to discover, figure out and experiment with.

My inspiration came from the octagon, a shape I've been playing around with for a while now. Besides that, the octagon, in my eyes, has endless possibilities, and also carries symbolic meanings for regeneration, infinity, totality, rebirth and transition, which are generally interesting terms to think about.

This name actually comes from the deceptive front of this cabinet.

The way in which I combined the grains of the sycamore gives the illusion that the octagon appears as a shallow hemisphere, and the cherry corners seem to be pointier than they actually are.

The carcass itself is joined with own branded dovetails, which I call the 'SunRay Dovetails' – when looked at from the right angle they resemble sun rays; whereas when you open the cabinet, there is a complete change of scene, angles and dimension, plus a mirror. Those, in combination with the hemisphere, form a complete story, a continuum, a look beyond that of what you actually see.

There had been warnings about timber movement but I stubbornly carried out my idea and hoped that all would be fine, and luckily it was. Having said that, if this project had been a commission, then I would have proceeded with more care and not taken risks like that.

'Hemisphere' is made from American cherry and sycamore. I chose to use two colours, which would contrast each other nicely. **GW**

Machining the timber



▲ Pic.1 The first step was to rough cut some timber. Ripping timber is always a bit of a tense moment, as you can never really tell how much the boards will spring back



▲ Pic.2 Luckily for me, the end result was what I was expecting!



▲ Pic.3 Here you can see the rippled sycamore about to go over the surface planer. I was really curious as to the result

Custom dovetails



▲ Pic.4 In the meantime I'd been practising my newly invented type of dovetail, the 'SunRay Dovetail'



▲ Pic.5 It did take a few goes to get the angles right in order to make them work and look good at the same time



A few things you need to know



▲ Pic.6 Here you can see the first results of a carcass panel, which I glued up in a custom-made jig. It came out really well and the jig works a treat. I then went on to load a second panel so that I could practise my 'SunRay Dovetails' on them



▲ Pic.7 A first glance of how the side panels will look once assembled



▲ Pic.8 On all components, I planed the outer edges by hand, then using a jig and router, the inner edges where the components meet, to ensure the angles were absolutely spot on



▲ Pic.9 I then re-planed my timber after having given it some time to settle. It was then on to marking out the cutting list on the planed timber for the carcass, using the templates I'd prepared and finally, cutting the components using the bandsaw



▶ Pic.10 Once done, it was a case of getting them all in the right order and matching them up

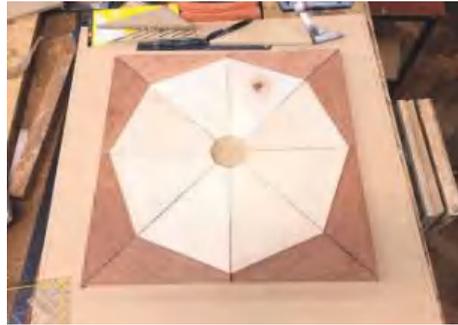


▲ Pic.11 For jointing, I used the biscuit jointer and the same jig to assemble and glue up the components for the carcass panels

Creating the door panels



▲ Pic.12 It was then time to rough cut the components for the door panels. The end result looked like a pile of offcuts, but...



▲ Pic.13 ... once laid out, you're able to get an initial impression of how the door panels will look. I always try to incorporate an imperfection, like a knot, in my pieces



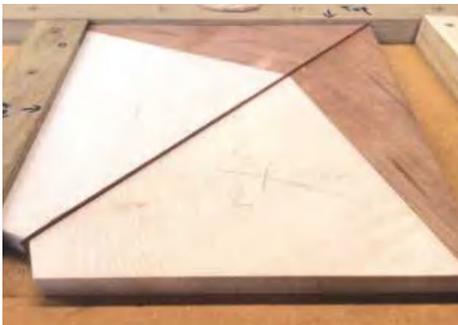
▲ Pic.14 To glue up these components, I built an adjustable jig to first glue an eighth of the face, which is two components, then a quarter, which is four components, and so on



▲ Pic.15 Another jig was used to hold the components for cutting the biscuit slots in one side, followed by the other. I generally use too many rather than not enough biscuits



▲ Pic.16 To achieve absolute symmetry, I imitated the gap between the two door panels by laminating a strip of cherry veneer in between every eighth. Once dried and trimmed, the veneer looked very neat



▲ Pic.17 I drew a rod of a quarter inside the jig to make sure that every quarter was exactly the same size. I did leave a few millimetres over-size to shoot down the doors when fitting them



▲ Pic.18 Here you can see the four quarters all joined together to make a whole. My teacher, warned me about solid wood movement. I tried to change the structure, but it wouldn't work, so I stubbornly went for what I had in mind

Cutting the dovetails



▲ Pic.19 It was now on to cutting the 'SunRay Dovetails'. I marked out the shoulders on all four pieces, measuring from the centre of the panel where the components meet, as this was where the carcass and the door panels would have to line up when assembled

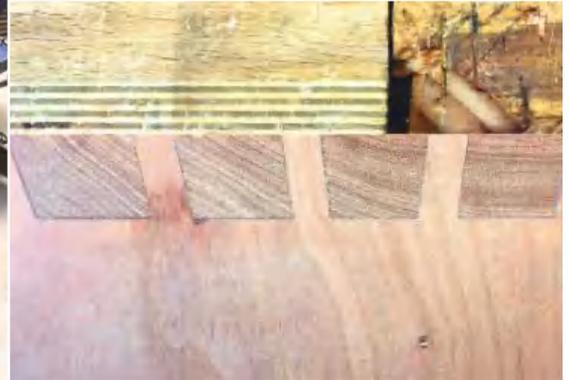


▲ Pic.20 I now had to measure and draw up the dovetails. In fact, I started to cut out the pins first rather than the tails, using a Veritas dovetail saw. I did try a pull saw but the Veritas made a cleaner cut and I found it easier to handle. After cutting, I filed down the saw marks to make the pins and tails fit even smoother. I was really pleased with how they turned out

Carcass clamp up



◀ Pic.21 I managed to cut all the joints flawlessly, so I dry clamped the carcass and went for the glue-up



▲ Pic.22 It was then time for some planing using low-angle block and jack planes to achieve a smooth finish, as you can see here



▲ Pic.23 This was how the cabinet was looking so far – I had to give myself a little tap on the back at this stage!



▲ Pic.24 In the meantime I sanded down the door panels using a wide belt sander and rough cut the interior components for the cabinet

Shooting the doors



▲ Pic.25 It was then time to shoot down the doors to make them fit. To glue and clamp the inner square structure, I had to build a box to clamp around it. I used biscuits to join them, then dry-clamped and glued everything up



▲ Pic.26 Once dry, I laid the structure onto the carcass and marked out the corner angles, making sure the structure was precisely centred. Once I had marked it off, I began to place the ends



▲ Pic.27 Another way to check if the angles were correct was to line up every corner with the straightedge



▲ Pic.28 A very snug fit! In fact, it fitted so tight that I didn't really have to take it apart to glue, but obviously I had to

Fitting the mirror



▲ Pic.29 Then I cut the rebate for the back panel and the rebate for the centre mirror. For the back panel rebate I used the overhead router...



▲ Pic.30 ... and for the mirror rebate I used a hand router. I made a bigger base for the router out of some scrap Perspex. With a template for the mirror, I went to have some glass cut



▲ Pic.31 My idea was to break the symmetry by fitting a little shelf in the left compartment



▲ Pic.32 A nice little detail was conceived because of a mistake but I'm glad it happened; it breaks up the plain appearance of solid timber. I decided to fill the gap using some cherry inlay – nice but simple

Creating the back panel

▶ Pic.33 Next was the back panel. Again, I wanted to create an effect which distorted the dimension slightly by creating a triangle-shaped bookmatch inside each triangle compartment; this made it look pointier than it actually is. I'm very happy with the mirror; it creates a nice sense of depth



The triangular drawer



▲ Pic.34 I then moved on to making the triangular drawer. Originally I wanted to combine timber types for the drawer but I ran out of cherry, although this didn't matter because it looked better in sycamore anyway



▲ Pic.35 Originally I'd planned two little shelves but went for one because I decided it would have been too crowded



▲ Pic.36 The drawer handle is a hole. There is also a smaller hole in the back panel to allow the drawer to open freely and not get stuck due to vacuum. I thought the figuring of the rippled sycamore worked really well here. I then used a pillar drill and a hand-held router to round off the edges

Final glue-up



▲ Pic.37 As usual, dry clamping was absolutely necessary here. Once glued, I had to shoot in the drawer. I used a belt sander to cut it to near size



▲ Pic.38 As the drawer wasn't running on rails, I hoped it wouldn't rattle when pulling or pushing. My bets were on oiled timber being smoother to run on



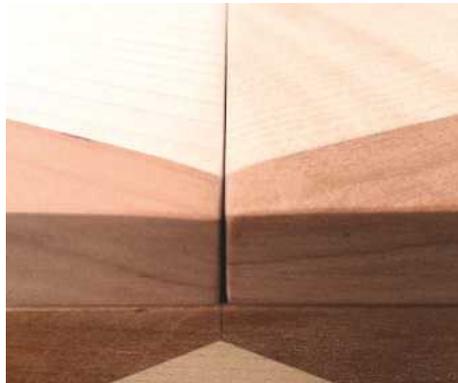
▲ Pic.39 As a stop, I used two little bolts on the open side of the drawer, which in this case, were on its side



▲ Pic.40 The next step was to fit the little shelf in the left compartment. I used the biscuit jointer again



▲ Pic.41 I decided to assemble it, then fitted the back panel and the hanging plates, before moving on to shooting the doors to size. I sanded them followed by the whole cabinet



▲ Pic.42 I rounded off and lowered the corners to give a smoother feel



▲ Pic.43 As a standard, when oiling, I massage the oil into the timber rather than applying lots of it and having to dry off the residue after a while. I was really pleased with the end result



▲ Pic.44 To fit the star I just dabbed a bit of glue into the corners, since it just needed to be held in place

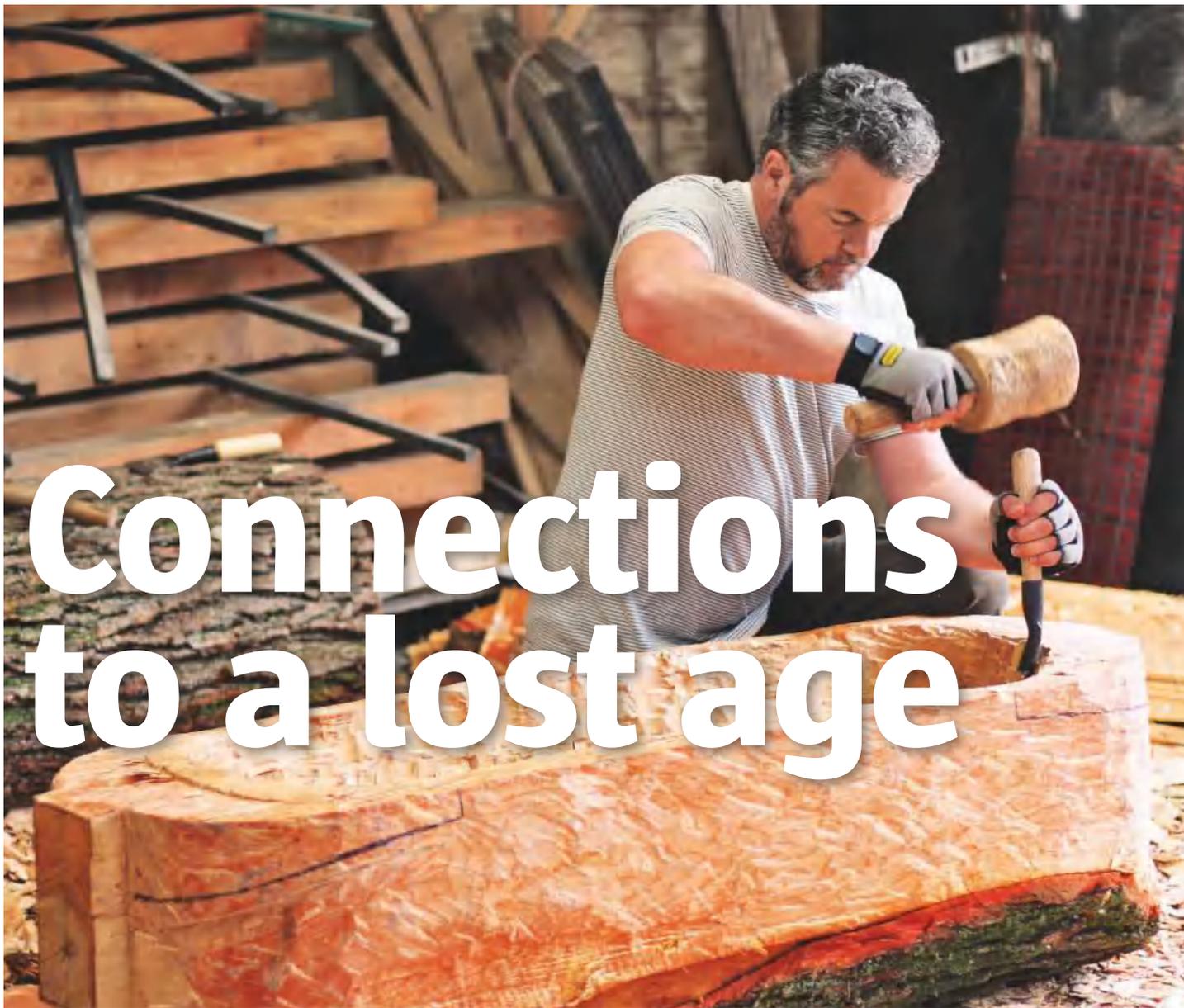


▲ Pic.45 As a closing mechanism, I used simple little magnetic pins, which produce a nice 'click' when closing the doors

Conclusion



All in all, I found making the cabinet very interesting. In hindsight, there are a few things I would do differently to save time and to be even more precise, and generally, I think it'd probably take me only half the time. Overall, I am very pleased with myself and very happy with the result. Oh, and I made this box to carry it in as well... See more of my work here: earthwoodcrafts.com



Connections to a lost age

Photographs by Brian Mac Domhnaill & Muireann Ní Cheallacháin

When awarded with a grant by the World Wood Day Foundation, **Mark Griffiths** decided to take on the huge task of rebuilding a replica of an Iron Age vessel discovered in a peat bog, using only a basic selection of reproduction tools and working methods from that era. He shares his story with us here

As I unlocked my workshop door on a crisp spring morning, the email alert pinged on my phone. It was a single line from Ben: "I think we've won the grant!"

Dr Ben Gearey is an archaeologist, a familiar face on Channel 4's *Time Team*, and the grant was a yearly prize awarded by the World Wood Day Foundation. The Foundation is an organisation set up to promote and celebrate the use of wood in our culture. Each year they invite proposals from individuals with a story to tell about our cultural fascination and reliance on this versatile material.

Iron Age woodworking

Our proposal centred on a wooden vessel discovered buried in a Southern Irish peat bog some years before. Although damaged by the peat cutting machine that unearthed it, the vessel, which dated from around 36 BC, was in remarkable condition. This beautiful Iron Age artefact had been carved from a single alder tree, a tree that had great mythical significance

The Pallasboy Iron Age Vessel

in pre-historical Ireland. When first created, the vessel, which measured 1,300 long × 510 wide × 440cm deep, split at one end near the pith, most probably due to the timber drying too rapidly. The original maker had attempted a repair of this defect by insetting near invisible tiny wedges, demonstrating an incredible level of skill.

By re-making this object using the tools and methods of the time, we aimed to throw light on the process, working practices and challenges faced by an Iron Age woodworker, and along the way gain a greater understanding of the use and significance of the original Pallasboy vessel.

Detective work

Our group comprised of four members, and just like *The A-Team* we each had our specialist skills. I would be the woodworker challenged with crafting a faithful reproduction of the original; Caitriona Moore, a wooden artefact specialist, would be our guide on historical woodwork and woodworking tools; Brian Mac



▲ The original vessel, being dredged from the peat bog



▲ Sketch of the original vessel

Domhnaill, an archaeologist with a background in the arts, would both advise and document our progress at each stage. And finally, we had our team leader Dr Ben Gearey, an expert on pre-history archaeology. His role would involve smoking cigars, and making sure that the plan came together.

Using a bit of detective work, Caitriona had tracked the original Pallasboy down to Dublin museum's storage facility at Swords. A trip was planned, and within a few weeks we found ourselves together in a vast echoing building resembling something seen in *The X-Files*. Among grey metal shelves packed with all manner of objects representing every period of Irish history, we found our vessel. And so, watched over by a bubble wrapped Zebra, the team got to work. Brian took detailed photographs and recorded our observations; Caitriona studied the tool marks of the original maker – from these she would be able to put together the tool kit used; and I sketched out shapes, details and took measurements of every part of the Pallasboy. This was a rare opportunity to get the team and the original



▲ The team, from left to right: Dr Ben Gearey, Caitriona Moore, Mark Griffiths and Brian Mac Domhnaill

object all together in one place; we each had to make it count and gather every piece of information needed.

We were fortunate to have on hand Conor McDermott; he was one of the original team of archaeologists involved in the vessel's excavation back in 2000. He explained to me

about the pre-history culture that had created this object, and the many theories concerning its original use: bath/cot for an infant, boat for transporting heavy objects on the river or a feasting vessel. I remember asking him that if it was used for feasting, then why did it have a rounded base? His simple reply was: "There were no flat surfaces in the Iron Age." This shape would sit better on the rutted, uneven ground.



▲ The reproduction Iron Age tools made by historical blacksmith Terry Tyhurst

Iron Age tools

One of our greatest challenges was proving to be tracking down a suitable sized alder tree. This unenviable task had fallen to poor Brian. Although abundantly found in the Irish countryside, alder is little used in joinery or furniture making these days. The majority of



▲ A reproduction Iron age axe



▲ Splitting the log



▲ Marking out the shape



▲ Starting shaping



▲ Shaping the inside with an axe

timber Brian was offered came from storm felled diseased trees, or was just too small. Then amazingly, he tracked down a local land owner who had a tree 600cm wide (the exact size we needed) who, on hearing of our worthy project, was happy for us to fell it.

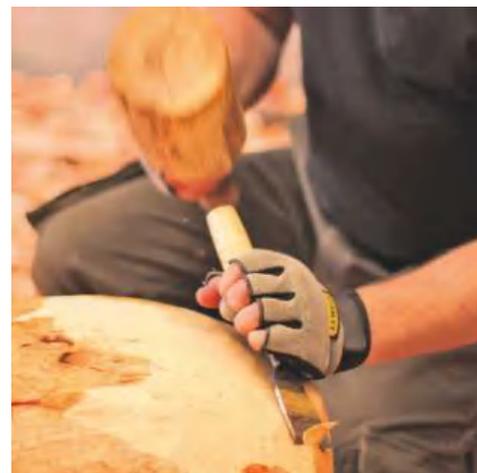
Back in the UK I received a call from historical blacksmith Terry Tyhurst; he had finished our replica Iron Age woodworking tools. From her studies of the original, Caitriona had put together an idea of what our pre-history maker's tool kit would have looked like and it was these designs that Terry had faithfully recreated at his forge.

Due to the poor quality of the metal, early Iron Age blacksmith-made tools (and weapon heads) had a sleeve that wrapped around a wooden handle or shaft. As the technology advanced, tools such as the axe and adze were forged with a hole, or eye, for the handle to fit into, a design still used on today's tools. As part of the project, we would be comparing both styles to see how they matched up.

Carving the vessel

Weeks later I was in Cork City's Meitheal Mara boatyard standing in front of two large sections of an alder tree. Meitheal Mara, which translates as 'workers of the sea' is a community project that runs classes in boatbuilding and seamanship. They had very generously allowed us to take over part of their yard on the banks of the river Lee.

Of the two logs to choose from one was taken



▲ Shaping with a chisel

The Pallasboy Iron Age Vessel

from a higher part of the tree: it was straight and defect free, although it came in a little under the diameter we were hoping for. The second log was closer to the size of the original, and like the original, it was cut close to the root end. The roots of a tree carried a deep spiritual significance in pre-history Irish culture, as they are seen to connect with the earth, and by association, the underworld. With its hard rooty grain this log would be a greater challenging to carve; however, authenticity dictated that this would be the one.

I only had nine working days in Cork so I wasted no time in preparing our chosen log for splitting. I would be following the ancient method of splitting timber using just wooden wedges. Working from the top of the tree



▲ The axe being used as a chisel



▲ Smoothing with a chisel



▲ Checking details with the team



▲ Note the change of colour in the timber

down, a horizontal line is scored in the end-grain with blows from the axe. Small shallow angled wood wedges are then hammered into this line using a rough wooden club (or beetle). As the split opens, following the run of the grain, larger steeper wedges are forced in. Brian rigged a microphone up to capture the satisfying cracks and bangs made as the timber fibres yielded.

After the newly exposed face had been levelled with the axe, I got to work plotting out the shape. I was using a very unauthentic marker pen rather than the sticks of charcoal which would have originally been used. Coincidentally, alder is considered to be one of the best woods for charcoal making.

Over the next five days, I carved the log using our four replica Iron Age tools, which consisted of an axe, curved adze, gouge and a flat double-bevel chisel, and their contemporary equivalents, including an axe made by Robin Wood.



▲ Working in an awkward position



▲ Adding the chip carved detail



▲ Shaping the ends



▲ The end detail



▲ The completed chip carving

With the first few blows it was easy to see why the alder tree was so closely associated with death in this early culture. As the axe fell the timber started to 'bleed' thick red resin. The wood also underwent a dramatic and rapid colour change. In just an hour or so it transformed from a soft creamy white to a strong brick red.

The Iron Age tools took some getting used to. The width of the axe head, for instance, made accurate blows hard to achieve. And no matter how well it was secured, after every few blows,

the adze head would drop off. As frustrating as this was, Ben made the point that to a pre-history woodworker, these tools were cutting edge technology. To them this was the way you used the tool: if the head had to be re-attached every fourth strike or so, then so be it. I'm sure the power tools in my workshop will appear slightly inefficient to a woodworker two thousand years from now!

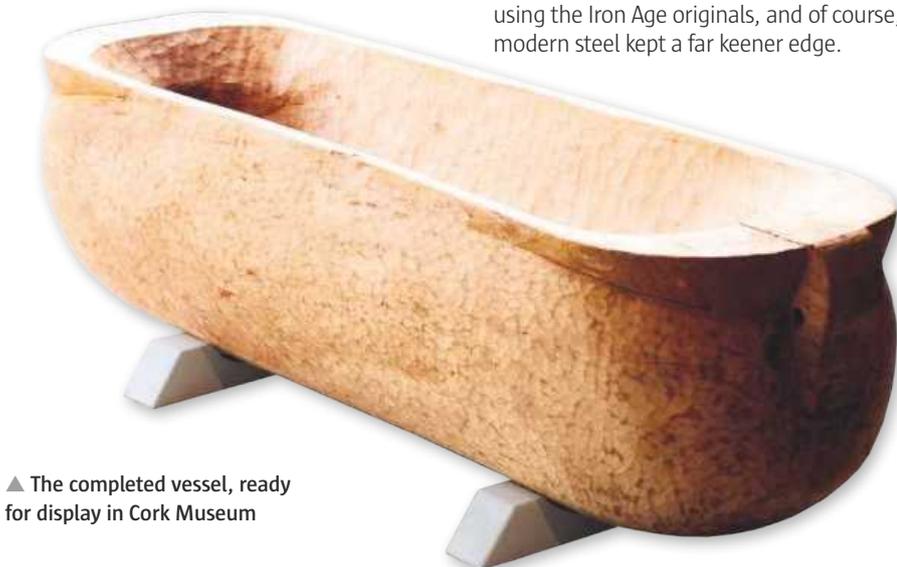
At each stage of crafting I timed the progress of the replica tools compared to the contemporary set – on average the work took twice as long using the Iron Age originals, and of course, the modern steel kept a far keener edge.

On display

After nine blister inducing days the vessel was finished. As with the original, and as expected, large splits had started to open, radiating out from the pith. Far from being disappointed we were fascinated to share the same seasoning problems faced by the original maker. It led to discussions as to whether the vessel had found itself submerged in the peat bog not through some mysterious ritual, but as a way to swell the timber and prevent structural damage.

On the day we installed our copy of the Pallasboy vessel in Cork's Public Museum, we reflected on how this project had brought to life working with wood during the Iron Age. For every question we had answered, many more were posed.

For me personally, the greatest discovery had been the strong connection I felt to this craftsman from a lost age. We shared similar simple tools and we both understood that working with timber is always as challenging as it is rewarding. And above all, I could see in this maker's work a love and respect of this craft that can span two millennia. [BT](https://thepallasboyvessel.wordpress.com)



▲ The completed vessel, ready for display in Cork Museum

Further info

To find out more about the project and to see more photos, visit the team's blog: <https://thepallasboyvessel.wordpress.com>

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An addictive antidote

Photographs by Phil Callow – philcallow@mac.com



Barrie Scott visits Mike Abbott's green woodworking school and speaks to some of his students who are thoroughly hooked on this enjoyable and relaxing pastime

Ruth Busbridge in her garden with the chairs she has made

Ruth Busbridge works as a database programmer. Highly cerebral stuff and performed sitting indoors with hi-tech kit. She has, though, found an activity that is a complete contrast for unwinding: the satisfaction of hand and eye work gained from the pre-industrial practice of green chairmaking.

She has created her collection of ash chairs over a period of 30 years in a series of week-long courses. Set around her table, each chair has its own charms. The design chosen at the time, one could speculate, has its own significance and associated memories.

The latest addition to the tribe is the bright, fresh looking number at the centre of the five chairs pictured. The higher back is a useful choice as is the curve on the back legs and spindles because it is extremely comfortable.

Her teacher throughout these years, Mike Abbott, talks of the need for 'bounce' as a measure of good design and construction in green ash chairs. He provided a demonstration when I looked in on one of his classes back in the early autumn. He threw a chair down so it

would land on one leg, with enough force to fracture lesser furniture – and bounce it did, without a creak!

The natural springiness of ash and the strength of cleft timber, allowing for use of the light components, combine to provide a little give as backbone meets woodwork – instant osteopathy in fact!

The perfect tenon

An interesting factor in this design of chairs is that the rails connecting the chair legs are dry fitted – no glue and no pegs. The tightness of the joint is the key. Many will know Mike Abbott's work in this field, not least for the books he has written on the subject. He currently holds chairmaking courses at his woodland workshop out in Worcestershire farmland. In his quest for the perfect round mortise & tenon, he now uses the Veritas tenon cutter. He worked his way through earlier versions of the device and has settled on the Veritas $\frac{3}{16}$ in cutter combined with a $\frac{1}{16}$ in auger bit for the mortises – $\frac{1}{8}$ in smaller for



Mike Abbott demonstrating the 'bounce' quality test

Abbotts Living Wood – green chairmaking



A student making the beginning cut to insert the froe to cleave the log

increased compression. These he imported from Canada and USA respectively where imperial measurement is still the norm. The cutting action is akin to the workings of a hefty pencil sharpener and can be used in a hand-brace but more accurately in a battery drill. The built-in spirit level on the cutter is designed to further increase control of the cut.

A custom in Mike's classes is to put these dry joints to the test. He secures a newly assembled chair at head height from a handy beam or branch and invites the student to grab hold and hang full weight from it. It works; and there in Ruth's garden are examples of how it continues to work – for years.

At the leisure end of the workshop, above the wood-oven 'complex' is a curious wooden cupboard. It is a drying unit, a refinement in green timber jointing: controlling the moisture content of components.

Back legs and spindles that have been steam-bent are dried in a separate unit with hot air fed by ducting from the oven, to consolidate the shaping. This, however, reduces their moisture content and so begins the shrinking process. If the tenoned rails are fitted tightly when still green they will, in time, shrink more than the mortise and the joint will loosen, so they too need a few hours in a warm box. A further consideration is that rounded timber, when drying, will tend to shrink to an oval shape. It is then expedient to set the wider part of the oval tenon in line with the grain rather than running across it and risking a split. These fascinating, finer points are discussed in some detail in Mike's most recent book *Going With The Grain*.



The class at work with the second stage – reducing timber with drawknives at the shavehorse



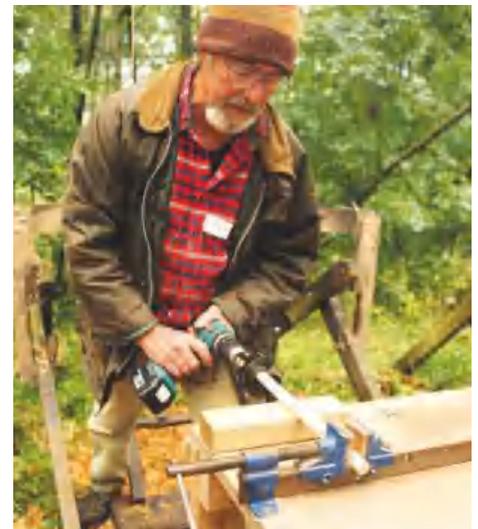
The drying cabinet

The froe is an evolved tool that has not been bettered for centuries for cleaving lengths of green timber. The metal head is a wide, short wedge – anything from 75-406mm in length – that is driven into the end-grain of a log. The wooden handle acts as a lever to twist the blade, widen the split and also, where needed, control the cut against going off course.

There are knacks to the process like inserting a wooden wedge in a partially cleft log to prevent the split springing closed allowing the adjustment the position of the froe. Once mastered, a nice piece of clean ash will cleave in two very tidily. The split "talks to you" as one green woodworker told me. There is a drawn out tearing sound when it starts to go.

The cleaving brake is another simple but effective device for holding a log in position for froe cleaving. It is a pair of stout horizontal timbers secured, tapering into in a 'V' shape. A tightly forked branch works admirably. The taper serves to accommodate different log sizes and the downward pressure of cleaving holds it in position.

Woodworking is full of jigs and useful holding devices, such as the popular bench hook or the comma clamp – the simple time proven



The Veritas tenon cutter in action

efficiency of green woodworkers' devices have their own appeal.

Woven seating

The Mike Abbott school includes woven seating – the business bit of the chair. The various patterns make an attractive, comfortable finish. Materials include hemp, sea-grass and even an African palm fibre called kambaa. There is rush and a synthetic rush made from paper like the old 'Lloyd Loom' furniture. More unusual and perhaps closer to the subject of woodwork are the bark weaves: wych elm, western red cedar or hickory bark. It is the inner bark or bast, taken surgically from a log after the removal of outer bark.

I can see the addiction of this pastime but after nearly 40 years in the timber trade, I have a foolish resistance to paying for the privilege of working. I would like some of those chairs around my table, though! 

Further info

To find out more about Mike Abbott's green chairmaking courses, see the website: www.living-wood.co.uk



Good Woodworking

Letters

Write to: Good Woodworking,
Enterprise Way Edenbridge, Kent TN8 6HG
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Turning segmented



Jack's completed gherkin



The gherkin mounted on the lathe – just look at all those pieces!

Following on from Edward Hopkins' profile on segmented turner Bryan Cath back in issue 299, a friend of Cornish turner Jack Vage (now 90 and still turning) got in touch with a number of photos of his work and an explanation of the processes.

He has also turned a gherkin and sold it to a gallery a few years ago. It was made in July 2005 and comprises of 522 open segments of wood. There are 29 layers of 18 segments to the layer and the total length of the piece measures 508mm high x 228mm diameter and took roughly 200 hours to make.

The woods used are bubinga, maple, ebony, pink ivory, pau amarello, mahogany and three types of coloured veneers.

Well known on the turning scene, Jack has won numerous awards over the years, and justly so. An engineer by trade, he is still actively turning and producing amazing pieces which are incredibly complex and technical.

Jack is a very modest and private man, so we thank his friend for getting in touch and sharing his wonderful work.



Philip's wooden Aerial Square Four motorbike, 1/2 size

LETTER OF THE MONTH



Every part of the motorbike is painstakingly made in wood...



...and the detail achieved is unbelievable

Wooden wonders on two wheels

Hi Tegan

I wrote to you a while back regarding the 1/2 size wooden motorbikes that my father, Philip Miller, has made. He made a Matchless and an Aerial Square Four with sidecar. They both took him about two years each to make when he was in his late 70s and early 80s – he is now 87.

They were made in 10 different types of wood – everything is in wood right down to the chains!

He was a pattern maker by trade but has made many models and carvings since retiring from his garden furniture business.

Kind regards,
Tracy Dutch

Tracy, thank you so much for getting in touch and sharing your father's incredible creation with us. It is mind boggling just how he went about making such a thing, but it truly does show the immense level of skill he must possess. Definitely an object of awe for many woodworkers out there who I'm sure will be wondering how on earth he went about making such a thing! Inspiration for all.

Tegan Foley



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drop us a line – you never know, you might win our great Letter of the Month prize, currently a Trend Snappy Colour Ring bit set. Write to the address on the left for a chance to enhance your marking capability with this versatile workshop aid



Alex's 'MONROE' chair

Alex and his 'My Ami' bistro table and stool

Alexander White: A White Workshop

After spending a number of years working with various artists and designers, including Fred Baier and Paul Cockledge, Alexander White set up his own business in 2013. During his formative years, Alex won a number of competitions and awards as well as being shortlisted for the Homes and Gardens Young Designer of the Year Award 2014.

He started his career designing and producing hand-made and exclusive bespoke furniture for high-end private clients but he has worked on projects spanning various scales from architecture and staircases to sculptures and furniture. Alex now also designs commercial works for high street retailers as well as collaborating with manufacturing companies to produce new and semi-exclusive pieces, pushing his own and their

own capabilities. Shown above is his 'My Ami' bistro table and stool, winner of the Heal's Discovers 2015 competition, and his 'MONROE' chair, which uses 82 identically CNC batch-produced components, which swivel around a central axis in order to create a complexly curved and comfortable armchair. To see more of his work, visit his website: www.awhiteworkshop.com.

Alex's work is incredibly inspirational given that he is a young designer-maker who has already achieved so much. His portfolio of high-end clients attests to his immense skill as well as the breadth of projects he has completed. We will be profiling him in a future issue.
GW in conversation with furniture maker Alexander White

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Around the House

with Phil Davy



We hardly need a reminder of how dismal the weather was at the tail end of last year. Maybe not too much of

a problem if you work mostly indoors, but pretty depressing for those who have to earn a crust while battling with the elements. Of course, you can't always pick and choose your jobs when self-employed, which can mean having to work outdoors when the weather is less than favourable. Dodging between a garage with leaky roof and rescuing tools that were at the mercy of sudden downpours was a real pain. At least the rain kept the dust down when sawing. If only we could choose the weather!

Phil Davy

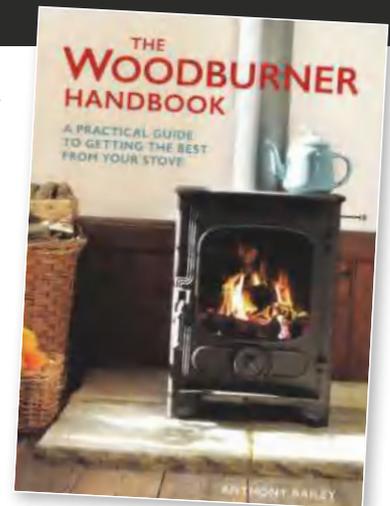
Phil Davy, Consultant Editor

Book review

The Woodburner Handbook

If you're prepared for the potential work involved when sourcing logs, there are few pleasures greater than a roaring woodburner during the winter months. For a busy workshop it can be an economical way to heat the space using offcuts. If you're considering buying a stove, this little book is well worth a read. It's not a comprehensive manual, more a guide for the novice, with a welcome lack of jargon. Technical terms are explained clearly, while a sprinkling of diagrams illustrate airflow, flue linings and splitting logs.

The three chapters deal with understanding woodburners, various fuel options, plus using and maintaining the stove. Pros and cons of steel versus cast-iron models, installation methods and flue types are discussed, while useful tips are dotted about the pages. A page on drying times and suitability of native timbers for fuel is welcome, while there's plenty of information on sourcing timber, from how to chop wood to actually owning



a woodland. Safety issues are covered, from carbon monoxide detectors to stove repairs and sweeping the chimney. A glossary rounds off what should become a handy guide. **GW**

★★★★★

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Out & about

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It's a sad fact of life that many of our high street hardware shops have disappeared, unable to compete with DIY sheds and internet sales. On a recent trip to the Black Country Living Museum, I was pleased to find that you can now visit a traditional ironmongers, dating back to the 1940s. The windows of Langston's corner shop display a delightful array of tools, including bow saws, wooden planes, boring bits, oil cans, folding rules, screwdrivers and a variety of hammers. Most of these would have been produced in Britain, probably Sheffield, though I suspect some would have been made more locally.

Inside you'll find the inevitable fibre Rowlplugs, hinges, locks and countless boxes of nails and GKN slotted screws. Hanging from the ceiling are buckets, chains, brushes, lamps and balls of string. Although items are



Langston's corner shop, a traditional ironmongers at the Black Country Living Museum

obviously not for sale, it's a fascinating glimpse of the not too distant past. Plastic bags had not been invented and paper ones were free. The only thing missing for me was the smell of paraffin... For more information visit www.bclm.co.uk, and don't forget to try the fish and chips while you're there! **GW**

Winter project

Takes: **A couple of weekends** **BATHROOM STORAGE**



All boxed in

Commissioned by a friend, **Phil Davy** tackles the tricky task of building a bathroom storage solution to enclose plastic casings and to create hiding places and space for life's essentials

 Storage space in many small bathrooms is often limited, so it makes sense to construct a built-in unit to make use of those unused nooks and crannies. Unlike more traditional enamelled cisterns, modern eco versions may not take up much space but the plastic casings are ugly and designed to be hidden. After having their bathroom tiled, friends asked me to enclose the cistern and provide cupboard space under the basin. Storage was also needed for toilet rolls, plus a matching bath panel to complete the package.

With several curved features it can be tricky to know where to start on a job like this. As most of the construction is from MDF, it's best to build a supporting framework from 50 x 50mm PAR softwood. I used pocket hole screws for jointing, which are fast, perfectly strong enough and hidden from view.

Glazed ceramic floor and wall tiles may look stylish, but they're not the easiest materials to drill into. To avoid the risk of cracking a tile, I decided to glue the framework, where necessary, using fast grab adhesive (Pink Stuff). This is very strong and seems to stick almost anything, so is excellent for such situations.

Fighting moisture

Always use moisture-resistant (MR) MDF in a bathroom or any room that is frequently



Tools you'll need
Mitre saw, circular saw, jigsaw, drill, biscuit jointer

damp. Although roughly twice the cost of standard MDF, it's worth the extra outlay. Easily identified by the green dye added to the resin mixture, MR MDF is produced in the same thicknesses as regular MDF, though these boards are not always so easy to track down. I used 18mm-thick material for all shelving and panelling, while the bath panel itself was from 6mm bead and butt MDF.

To continue the bead and butt effect on past the bath, both cupboard doors and vertical panelling were covered in 6mm MDF. Again, fast grab adhesive was handy here, though you could use contact glue or even a waterproof PVA. It's important that the 'joints' are plumb, even if the actual walls are not. This is quite fiddly work, so be prepared for plenty of sawing and trimming to get everything looking right. To gain access to valves and pipework the front vertical panel

(behind the toilet) can be removed by sliding it upwards. The top horizontal panel can simply be lifted out.

Tricky templates

A project such as this involves making several cardboard templates. In fact, it's not a bad idea to save any sizeable cardboard packaging if you have a project in the pipeline that's likely to benefit. Once you have an accurate pattern, cutting MDF to match the curve of a basin or similar is that much easier.

Once you've sawn the MDF, use a spokeshave to clean up curved edges and obtain a close fit. After panels have been finally fixed to the framework, you'll need to run a bead of silicone sealant around the joints anyway. Make sure this is an appropriate type for sanitary ware. 



1 This bathroom had recently been tiled, so fixing framework to the walls and floor would be tricky



2 Where possible, screw 50 x 50mm softwood to the end wall to provide a horizontal datum to work from



3 Make a couple of frames to support the MDF panels. A pocket hole jig is a fast method where joints will be hidden



4 Cut timber to length for the bath panel framework and wedge against the floor with vertical pieces. Cramp and insert pocket screws



5 Using a fast grab adhesive on glazed ceramic surfaces means there is no risk of cracking the tiles



6 The cupboard framework is butted up against the bath panel timbers. Apply glue underneath and drive in the pocket screws



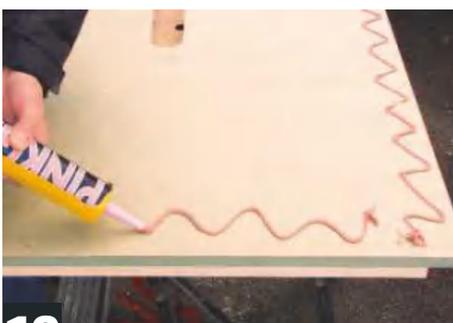
7 Make a card template for the panel behind the toilet. When this fits neatly, transfer the shape to 18mm MDF and cut out with a jigsaw



8 Check that the front panel slides down behind the toilet against the framework and clears any pipework



9 Draw around the 18mm panel on to the 6mm bead and butt board. Cut this to size with a circular saw and jigsaw



10 Apply adhesive to the front of the 18mm panel and position the 6mm panel on top. Cramp or pin until the glue has grabbed



11 You'll need templates for fitting each panel neatly against the basin. Scribe around the basin on to cardboard



12 Cut the template with a craft knife. Carefully position it on the MDF panel and draw around the curve

Winter project



Takes: A couple of weekends **BATHROOM STORAGE**



13 Tilting the jigsaw's baseplate will make it easier to clean up the sawn edge after cutting the MDF



14 Use a convex spokeshave to get a smooth curve on the basin panel. Check it's a snug fit against the basin



15 Draw around the 18mm panel on to the 6mm bead and butt MDF. Again, trim with the spokeshave until it fits neatly



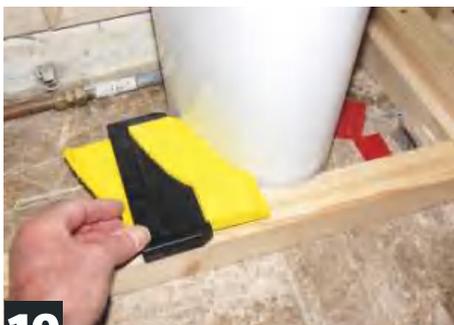
16 With all the framework in place, screw the basin panel in position. Check the lower edge with a spirit level



17 The process is the same for the basin's return end, except this time there's no 18mm backing panel



18 Spread glue on to the back of the basin board and press into position. Add cramps to hold it while the adhesive grabs



19 A lower board fitted to the bottom of the cupboard conceals the framework. A profile gauge will help with the template



20 A narrow horizontal board will be fitted alongside the basin. Use a scribing gauge to get an accurate curve for the template



21 The cupboard doors are fitted with concealed cabinet hinges. To check hole spacings, drill test holes on an offcut



22 Mark the hinge positions on both doors and drill with a 35mm Forstner bit mounted in a drill stand



23 Fit the hinges and screw their mounting plates inside the cupboard. Attach the doors and plane edges where necessary



24 Saw shelving to size for the wall above the cupboard. Cut a radius on one corner with a jigsaw and clean up with a sanding drum

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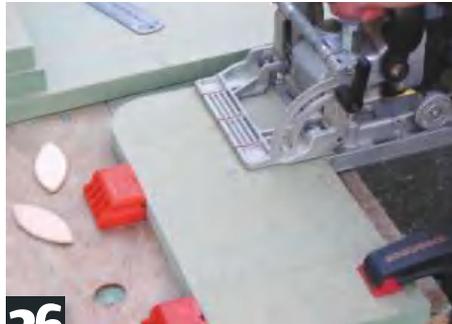
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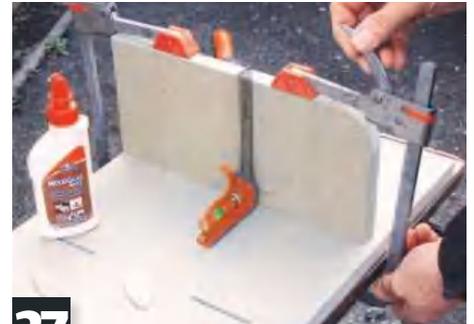
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25 Scribe and cut an 18mm panel to the end wall. Temporarily screw this in position, then mark out suitable spacings for each shelf



26 Shelves are fitted to the wall panel with No.20 biscuits. Mark out and cut slots with a biscuit jointer



27 Apply glue to the edges and insert biscuits. Cramp each shelf for at least an hour, checking they're square to the panel



28 Fix the shelving to the wall with 5.0mm screws. Fill the countersunk holes and sand flush when the filler is dry



29 Cut an 18mm horizontal panel to sit above the cistern. Rout the front edge with a bearing-guided roundover bit



30 The toilet plunger is mounted in the centre of the top panel. Depending on size, drill a clearance hole with a flatbit



31 This panel lifts out to give access to the cistern and pipework. A small shaped panel is fitted next to the sink



32 Add a shelf inside the cupboard if there's space. Making an accurate card template first will ensure a neat fit



33 The 6mm bath panel is light enough to be attached with magnetic catches. Screw sufficient blocks to the framework



34 A narrow panel at one end of the bath can be removed quickly for emergency access, if necessary



35 Fill and sand any nail holes. Brush on MDF sealer before painting the cupboard and shelving in your chosen colour



36 Using a cartridge gun, apply a bead of silicone sealant around the basin. Smooth this off while it's still wet

Useful kit: Ryobi R18ALF 18V folding area light

An illuminating discovery



Price: £79.99

Web: www.ryobitools.eu



▲ Pic.1 Whether folded or fully extended, you can choose to just illuminate the front or rear lamp, or have both on together

► Pic.2 The lamps are activated by depressing the front button and working through the sequence



► Pic.3 The upper lamp can be rotated through 270°



Ryobi seem to be ahead of the pack when it comes to designing products that appear to be niche accessories, rather than essential kit for the workshop.

That said, once used, you soon appreciate how they'd benefit your work. These may not be power tools in the conventional sense, but although cordless they're perhaps harder to categorise. Because Ryobi is a strong brand in outdoor and garden products as well as portable power tools, there's bound to be some crossover. It's certainly true of their new folding area light, which would be equally at home in a garage, garden or workshop, or as a portable lantern.

Cordless power

Unlike the area light (see GW298), this model is not a hybrid and will only run off a battery. It's supplied bare, so you'll need a Ryobi One Plus pack. Don't forget that with lithium power there's no gradual decrease in output, so the light will suddenly expire. Apart from that, this R18ALF is arguably more versatile, with several lighting options. Whether folded or fully



▲ Pic.4 The lamp accepts any Ryobi 18V battery

► Pic.5 The main fold-out hook is located at the top



extended, you can choose to just illuminate the front or rear lamp, or have both on together. These are activated by depressing the front button and working through the sequence. Each strip consists of 10 LEDs, which are extremely bright. Rated at 12W, the output is 850 lumens when both are active.

Made from high-impact plastic throughout, fitted with a 4.0Ah battery the unit stands 440mm tall when closed. Unfolded, this increases to 680mm. You can rotate the upper lamp through 270°, meaning you can direct the beam pretty well where it's needed. What's particularly clever are the multiple hanger options. The main fold-out hook is located at the top, while a second one at the base enables you to suspend the lamp overhead by hanging it sideways, fully extended. You could also insert a couple of screws in the wall above a bench to provide fantastic overhead lighting.

Conclusion

So what about performance? I used this lamp while building the bathroom project (see pages 72-75), and found it incredibly useful. Having a beam pointing in two directions simultaneously may seem unnecessary, but this really does light up a room nicely. To conserve battery life, switching to one lamp gives more than enough light for most situations. With a 4.0Ah battery fitted, in single lamp mode it ran for 10 hours. Even if you only have one battery, you can expect to get more than a full day's operation on a full charge. Brilliant!

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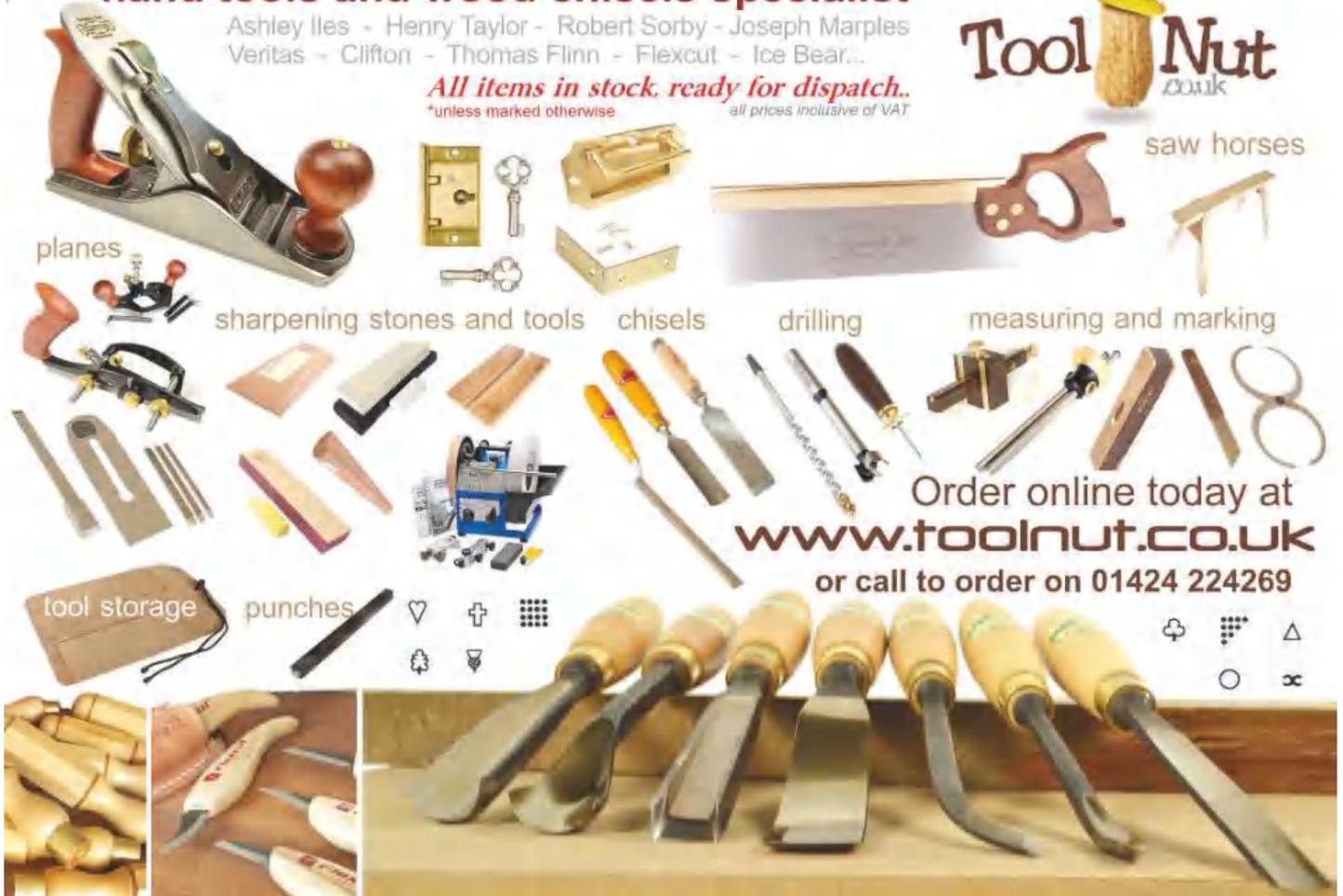
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A tale of two candlesticks



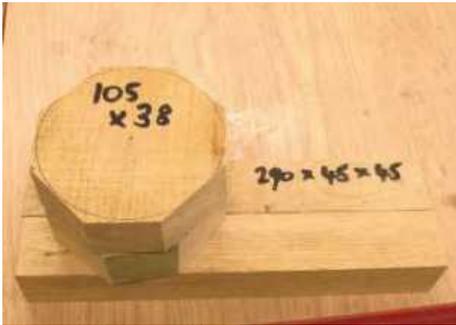
Les Thorne turns two identical candlesticks and finishes one using traditional methods and the other using ebonising spray and paste wax to create an aged effect

Wikipedia tells us that yin and yang describes how opposite or contrary forces are actually complementary, interconnected, and interdependent in the natural world, and how they give rise to each other as they interrelate to one another. What's all this spiritualistic talk got to do with woodturning I hear you say! Well, I like the thought of making something that is obviously a pair but you have to make your own mind up whether they fit together or not.

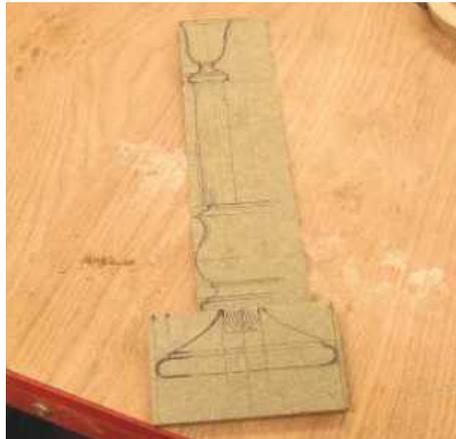
I have been doing demonstrations along these lines for a number of years, where you start with two identical bowl blanks and then make completely different shapes and get the audience involved in discussing which one they prefer. This is a great experiment not only for the amateur turner, but also from a commercial point of view: the more people like something, the more saleable it is.

This particular pair probably don't go together (in my opinion anyway); oak is a timber that really does improve with age and using a simple wax finish will allow it to develop a nice patina. A lacquered finish will keep the piece looking fresh for a long time (as modern finishes are designed to do). I like to think that the normal oak candlestick will look like the aged one in about 400 years' time. 





▲ Pic.1 Oak and ash are probably the most versatile of timbers if you want to add texture and colour. Starting off with identically sized blanks helps enormously when making things the same



▲ Pic.2 Here's my template: the design is an adaptation from one of my spindle form books. Make sure that you accurately mark the punctuation points where the shape changes



▲ Pic.3 Due to regulations, the candle can't come in direct contact with the timber. The brass candle cup requires a 22mm hole - 'V' blocks will allow you to drill an accurate hole, just wind the wood onto the spinning drill



▲ Pic.4 Now the hole is drilled you're ready to start turning. The base is held on a screw chuck. True up the bottom with a pull cut or use a scraper to remove any ridges left by the gouge



▲ Pic.5 Make sure that the base is slightly concave; this will allow it to sit on its outer edge. If you don't do this then the candlestick will be unstable



▲ Pic.6 To be able to turn the top detail you need a way of turning it around. Turn a dovetail chucking recess in the bottom to suit your chuck. If you make this 3mm deep, it can be filled with a piece of hardboard before you apply the baize



▲ Pic.7 This is one of my copying fingers set up on the diameter of the base. When the right amount of timber is cut away, then the finger falls down



▲ Pic.8 The bottoms of both bases are completed and the diameters are the same. Doing the job in stages means that you don't have to keep swapping between chucks, etc. which makes the process more efficient



▲ Pic.9 To achieve good copies the sticks will need to be the same height. Measure the thickness of the base so that measurement can be transferred to the other one(s)

Turning



▲ Pic.10 Using the template, transfer all the relevant details onto the blank, both on the face and the side. If possible, use a hard pencil like a 4H; this will give you a crisper line



▲ Pic.11 Just like turning a bowl, the majority of the timber is taken away with the 13mm bowl gouge. Here I am just refining a right angle detail with the round parting tool



▲ Pic.12 The hole for the stem is drilled on the lathe and the masking tape is used as a rough depth guide. A 25mm hole seemed to be about the right size, but as you will see later, if you go too big then this will cause some problems



▲ Pic.13 Rough the base to shape with some pull cuts using the long-grind bowl gouge before switching to the micro bevel tool and using a fine finishing push cut



▲ Pic.14 Rounding over the bottom section of the base will be aesthetically pleasing. The grain of the timber is going in a different direction than spindle work so the tool works up the bead rather than down; this will give you a superior finish



▲ Pic.15 Once you are happy with the shape, it's time to turn its twin. A good way of seeing how accurate you are is to put them 'nose to nose' like this



▲ Pic.16 Once you're happy with the bases, mount the stem between centres, make it round using your spindle roughing gouge and mark out the detailing on it using your template



▲ Pic.17 Cut the spigot to fit into the base. Make sure this is accurate; a set of Vernier callipers will give you a more precise measurement over the bow leg variety



▲ Pic.18 Let the shaping begin. Always design a piece within your capabilities: a simple design turned well is always better than an ornate shape turned badly. Keep your detailing crisp and smooth



▲ Pic.19 Some people see the skew chisel as the ultimate in turning tools. Here I am using a 10mm round version to cut this bead at the top, but switch to a gouge if you are more confident using that tool



▲ Pic.20 Where the stem fits into the base is one of the most important things to get right. I add 10mm to the diameter of the base's top and transfer that to the stem as my bottom bead diameter



▲ Pic.21 The next two photos show the importance of getting the tool in the correct position to make the cut. The bevel or cutting angle of the gouge is at right angles to the work; this will give an almost undercut look to the top



▲ Pic.22 The bottom or swell on the ogee shape is turned once again with the gouge; the bevel rubs as the tool is moved to the left. You can see that the flute of the tool is completely closed at the end of the cut



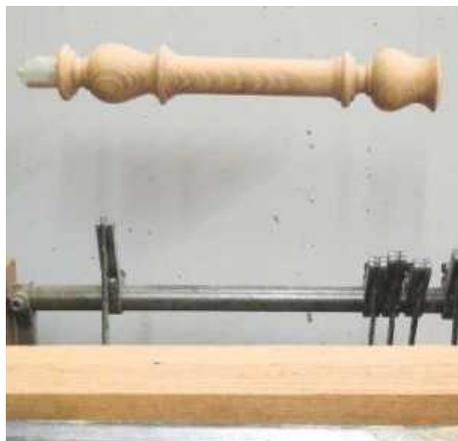
▲ Pic.23 The skew chisel is a great tool for doing planing cuts. Try and put the minimum amount of pressure down on the bevel of the tool or else you can end up with vibration marks on the stem, which you don't want



▲ Pic.24 When the first one is finished set the copying fingers up onto the major sizes; this makes the whole turning process much more efficient. Just keep removing wood until the fingers fall off



▲ Pic.25 Sand up the stem and when you have a parallel detail like I have here, it will be more efficient to stop the lathe and sand that area along the direction of the grain; this should stop those unsightly radial scratches that can appear



▲ Pic.26 When starting on the second one it will help to have the pattern in view – here I suspended the piece behind the lathe. A quick glance up will show you that the shape is matching that of the first one



▲ Pic.27 In the past, before I had these fingers, I had to have lots of callipers set to different sizes. The worst thing that happened was when you picked the wrong one up!

Turning



▲ Pic.28 Here they are, all finished and ready to critique. Despite being as careful as I could there is a 1mm discrepancy in height, which doesn't sound much but it does show



▲ Pic.29 The first candlestick is going to be finished using a traditional beeswax/carnauba mix paste wax. The timber surface is first sealed with an acrylic sanding sealer and then sanded lightly, wax applied and finally buffed to a soft sheen



▲ Pic.30 The second candlestick is going to have the paint effect on it. Firstly, wet the timber with water from an atomiser bottle; this will slow down the burning process



▲ Pic.31 Using a gas torch, lightly burn the surface – as the timber is wet you are less likely to remove all the shape. The burning will remove some of the softer growth from the timber and soften detail, mimicking the ageing process



▲ Pic.32 The use of a liming or soft brass brush will remove all the leftover carbon deposits. I have two of these brushes so I don't mind one getting contaminated with black



▲ Pic.33 Spray the work with ebonising lacquer and then apply the liming wax. The wax should be liberally spread all over the surface, paying particular attention to working it into the grain



▲ Pic.34 Using a shoe brush with a little paste wax on, remove the excess liming wax. Work across the grain; this will stop you from removing too much of the white



▲ Pic.35 With the lathe running slowly, use a piece of Nyweb pad equivalent to '0000' wire wool to finish of the liming process. I like to apply fairly hard pressure to get the desired effect before applying a couple of coats of clear gloss lacquer



▲ Pic.36 The completed candlestick pair should look something like this

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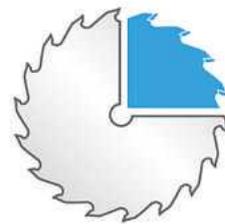
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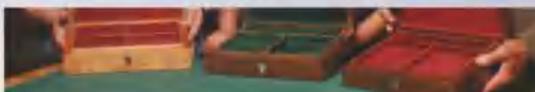


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Michael's musings



Glues & glue-ups

Michael Huntley shares his thoughts and advice on the stickiest of subjects: glues and glue-ups

There have been a couple of glue-ups in the workshop recently and they epitomised the way glue-ups go. The first, which should have been really difficult, was very easy; and the second, well you guessed it, was a real nightmare. So, what should have been done and wasn't?

Types of glue

It's hard to say; I think it was just down to lack of experience, but also the choice of glue played a part. So let's start with glues. My normal choice of glue is old-fashioned hot animal glue if the item is not intended to be in a damp environment. Animal glue is easy to clean up and pretty much just as strong as PVA, but doesn't have the flexibility of PVA when cured. One of the down-sides of animal glue is that you have to work fast and both the components and the workshop should be warm. Not easy in winter time in an outdoor workshop. So we chose to use Titebond 3 (which is aliphatic and an 'advanced' form of synthetic glue). It gives a reasonable 15-minute work-time, is not particularly temperature

sensitive, but is very strong. Ordinary PVA would have required a longer cramping time so we didn't choose that; however, it would have washed off easier in the circumstances!

A sticky situation

So, everything was ready, a dry run had been done several times, components were marked, the student started applying glue and I was ready with the rags and cramps. It was all going swimmingly for the first two assemblies, but there were problems getting the cross rails in. Suddenly it became apparent that the cross rails had been swapped over and didn't quite fit. This was at about 10 minutes lapse time. Now if it had been animal glue, I would have said take it apart, wash it off and let it dry and start all over again, but at this stage I didn't know that the wrong rails had been used, so we kept going because to wash off all the Titebond 3 would have been quite hard at this late stage of cure. We got there in the end, just; it stood square and the gaps were minimal, but it was a lesson for both of us. 1) make certain you mark everything clearly

and you pick it up in the right order; 2) if it starts to go wrong, accept that you are not going to get it done that day, wash off the glue and go and have a cup of tea and come back to the job later (having worked out which bit was stopping it going together and correcting it). Easy to say with hindsight, though.

The lack of experience part is a problem because part-time students only do glue-ups once in any project. You may get lots of practise cutting many, many joints but you probably only do two or three glue-ups a year. How do you get sufficient experience to be relaxed when doing a complicated glue-up for the first time? The only answer is 'progression'. Let your choice of projects slowly get more complex. Don't dive in with a fancy third year project in your first year just because a family member wants something that is beyond your experience to make.

These are my personal thoughts and are meant to be thought provoking, so if you have an alternative method that works for you, please do write or email in and tell us about it. [GW](#)

Engineered Precision



What a Belter!

TA 1200BS

Triton's **TA1200BS** Belt Sander is host to many significant features, from variable speed control for improved versatility, to belt tracking adjustment for accurate alignment of the sanding belt.

Fitted with a small diameter front roller ideal for sanding in awkward areas, the **TA1200BS** boasts a rubber over-moulded grip and removable bail handle for increased support, safety and control of the tool.

A powerful, variable speed motor drives the sanding belt at between 200 and 450m/min, complemented by the lock-on button which provides convenience and comfort during extended use.

For a cleaner, safer working environment the **TA1200BS** is fitted with a side dust port that connects to the dust bag supplied with the machine, or can be connected to a dust extraction system.

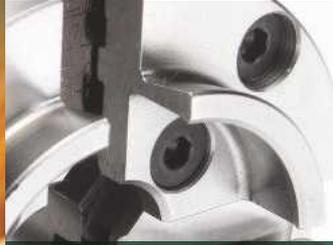


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